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1977 - 1978
CATALOG

Worcester State College

Division of Graduate Education and Special Programs

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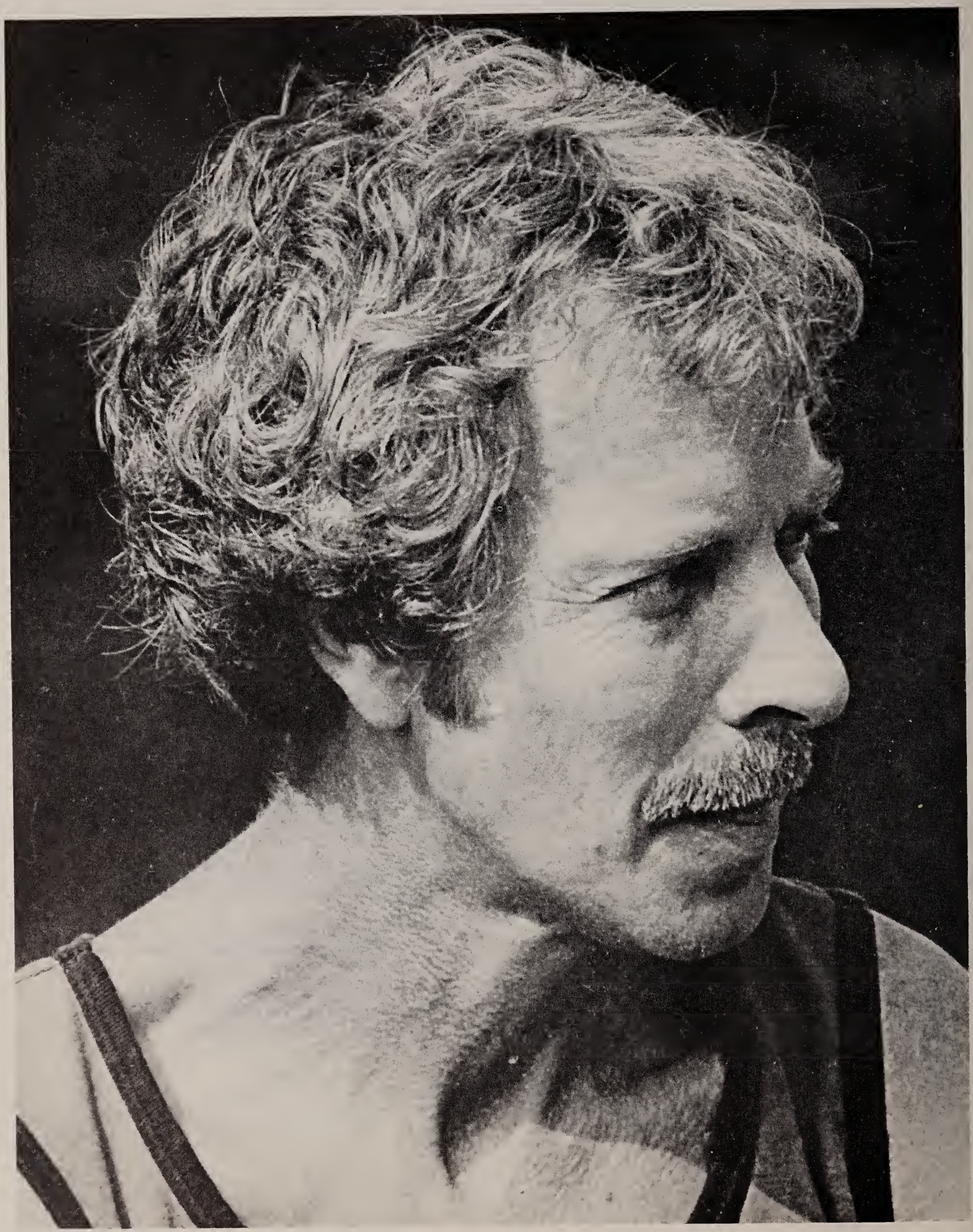
INTRODUCTION

Mindful of its historic role as a public institution and aware of primary responsibility to serve the needs and reflect the wishes of the citizens of Massachusetts while simultaneously maintaining academic traditions and integrity, the Division aspires to promote the welfare of the present and future college community within a flexible framework.

THE DIVISION STRIVES TOWARD THE FOLLOWING OBJECTIVES:

- To extend the opportunities of higher education to the greatest number of students, regardless of age, sex, race, color, creed, and ethnic origin;
- To encourage the individual student in his/her search for self-fulfillment personally and professionally throughout his/her life span;
- To nurture the student's commitment to life-long learning by such means as the ability to analyze and synthesize information, to think independently and critically, and to respect the opinions and cultures of all peoples while seeking to improve the quality of human life (physically, politically, socially, economically, and psychologically);
- To continue to strengthen the quality of academic offerings within the Division;
- To maintain flexibility regarding the diversity of courses and programs while guarding against unnecessary proliferation and responding to emerging needs and interests of all citizens;
- To expand the service to the public which has been a strong tradition in public higher education. To cooperate with public and private institutions of higher education in program development as well as in the use of faculty and facilities;
- To improve articulation with two-year colleges in order to facilitate student transfer and mobility;
- To prepare individual students to meet the present and emerging needs of society while simultaneously maintaining concern for the student's career priorities;
- To continuously provide options and opportunities which evidence an awareness of individual learning styles;
- To continuously be aware of the necessity for new programs, develop them expeditiously while maintaining academic integrity;
- To provide additional educational options for personal and professional renewal;
- To cooperate with public and private institutions in attempting to meet societal and institutional priorities;
- To encourage individual awareness of and involvement with community, state, national, and universal concerns and problems;
- To make the most effective and efficient use of the human, natural, and material resources of the college and community populations.



GENERAL INFORMATION

ADMINISTRATION

The Division of Graduate Education and Special Programs is administered by the Dean of Graduate Education and Special Programs, the Associate Dean for Graduate Education and the Associate Dean for Continuing Education.

The governance structure of Worcester State College includes a Graduate Education Committee composed of four faculty, four students, and two administrators. The function of the Graduate Committee is to work with the Dean in improving the quality of the services and programs offered by the Graduate Division and in otherwise developing the Graduate program. The Graduate Committee advises the Dean on academic policy; reviews the degree programs offered by the Division of Graduate Education; reviews and makes recommendations concerning new programs proposed for the Graduate Division and generally advises the Dean and the college community in all academic areas touching upon the graduate degree programs.

All graduate programs offered by the Graduate Division originated in the appropriate academic department of the college. The department retains responsibility for the maintainance of the quality of the degree specialization, for recommending changes in the degree program, and for recommending new courses. A departmental member is the designated advisor and coordinator for the degree program.

A full-time member of the appropriate academic department and of the graduate faculty at Worcester State College serves as the designated advisor and coordinator for each degree program and/or concentration. Advisors, highly qualified in their area of specialization, provide a vital link between the students, faculty and the Dean and are key figures in the administrative and academic system. Their function is to guide and counsel graduate students in academic specialization. They assist degree candidates in preparing their plan of study for the degree and must approve all courses accepted toward their advisees degree programs.

OFFICE HOURS

Inquiries regarding graduate and continuing education should be directed to this office.

During in-person registration, late registration, and when division classes are in session, the office will be open according to the following schedule:

Monday-Thursday	10:00 a.m.-9:00 p.m.
Friday	10:00 a.m.-4:00 p.m.

During other periods, the office will be open according to the following schedule:

Monday-Thursday	9:00 a.m.-9:30 p.m.
Friday	9:00 a.m.-4:30 p.m.

The Office of Graduate Education and Special Programs is located in:

Room S112—Science Building
Worcester State College
Telephone Number: 752-7700 (ext. 253, 273)

STUDENT RECORDS

Students have the right to view educational records pertaining to them which are kept in the Office of Graduate Education and Special Programs. Parents of students under 18 and/or parents of students who are dependent upon their parents (for Federal Income Tax purposes) have the right to view these records. Authorized Federal and State officials may view the records. Worcester State College faculty and staff members having legitimate educational interests may examine student files. Organizations conducting authorized studies may examine student records if the identity of the student will not be revealed in the study report(s) and/or publication(s). Persons processing a student's financial aid application may view student files. Recognized accrediting agencies and organizations may examine student files in pursuit of their accrediting functions. In an emergency, the Dean of Graduate Education and Special Programs (or his designee) may permit access to the records if this access is necessary to protect the health or safety of the student or other persons. The student may grant access to individuals or organizations not specified above. In this event, there must be written permission given by the student. The organization or individual so designated must provide proof of identity in order to examine the student records.

Confidential evaluations and/or recommendations which were placed in the student's file prior to January 1, 1975 are not available for viewing by students or parents.

A student may voluntarily waive his/her right of access to his/her records. Any such waiver becomes part of the file.

In order to examine student files, students and eligible parents must complete the Request for Viewing Records Form. Individuals and/or organizations given permission by the student to examine records must present the completed Authorization for Release of Educational Information Form. Anyone who examines the student's record must sign a log which becomes part of the file. All requests to examine student files by students, parents, individuals, or organizations must be referred to the Dean (or his designee) for compliance.

NO PERSON OTHER THAN THE DEAN OF GRADUATE EDUCATION AND SPECIAL PROGRAMS (OR HIS DESIGNEE) MAY TAKE ANY ACTION ON REQUESTS TO EXAMINE STUDENT RECORDS.

GRADING POLICY

The grading system for graduate students is as follows:

Letter Grades—A, B, C
E (Failure)
W (Withdrawn)
I (Incomplete)
Students who, for valid reason, are unable to complete the requirements for a course during the semester, may receive a grade of I. Specific arrangements for completing the work before the end of the eighth (8th) week of the succeeding regular academic semester must be made before the grade of "I" is officially recorded. Failure to conform to this policy will result in the automatic entry of an official grade of "E" to replace the "I" after the eight (8) week period.

THERE IS NO GRADE OF "D" AT THE GRADUATE LEVEL.

Matriculating graduate students are urged to familiarize themselves with the academic standards required by the Graduate Division and by their specific program of study in order to comply with degree provisions.

ATTENDANCE POLICY

Students are expected to attend all scheduled class meetings of courses in which they are enrolled.

If absence from a class session is necessitated by illness, accident, or other valid reason, the student bears the responsibility to inform the instructor of the reason for the absence and to arrange to make up any class work and/or assignments.

ACADEMIC ADVISEMENT

Matriculated Graduate Students:

It is strongly recommended that the guidance and advice of the staff of the Division of Graduate Education, the Advisor in the student's area of concentration, and the student's Guidance Committee be consulted and followed in order to avoid academic difficulties.

Non-Matriculated Students:

Assistance in the selection of and registration for courses is available at the Office of Graduate Education and Special Programs.

ACADEMIC REVIEW PROCEDURE

This is a recommending procedure to mediate complaints brought forth by students enrolled in courses through the Division of Graduate Education and Special Programs.

Level I—The Professor of Record (or his/her designee)

1. The Professor of Record (or his/her designee) is required to maintain all pertinent criteria pertaining to the students' grades for six (6) months after a course has ended.
2. Any student question and/or complaint regarding a final grade must be directed initially to the Professor of Record (or his/her designee) within one (1) month after final grade reports have been mailed.
3. The student must allow a minimum of seven (7) consecutive working days for meeting with the Professor of Record (or his/her designee) to be scheduled after one is requested. A student shall have access to all academic criteria used to determine the grade upon a 48-hour written notice requesting access. The request must be directed to the Professor of Record (or his/her designee).
4. The student must be notified in writing of the result of the meeting by the Professor of Record within five (5) working days of the meeting. In the event that the academic matter is resolved at Level I, it goes no further. In the event that the matter is not resolved at Level I, it may proceed to Level II.

Level II—The Dean of Graduate Education and Special Programs

1. The Dean of Graduate Education and Special Programs shall schedule a meeting with the Professor of Record (or his/her designee) and the student to mediate the academic concern. This meeting shall take place within ten (10) working days following the receipt of the proceedings initiated at Level I.

TUITION AND FEES

TUITION	
Massachusetts Resident	$25 per credit
Non-Resident of Massachusetts	$32 per credit
Audit (Resident and Non-Resident)	$18 per credit

FEES	
*Registration Fee (per semester)	$10.00
*Library Fee (per semester)	$10.00
*Late Registration Fee (per course)	$ 2.00
*Course Change Fee (per course)	$ 2.00
*Placement Fee (for those receiving degrees)	$ 2.00 $ 5.00
*Parking Fee (payable separately)	$
*Transcript Fee (payable separately)	$ 1.00

*THESE FEES ARE *NOT* REFUNDABLE UNDER ANY CIRCUMSTANCES.

All tuition and fees are payable on the date of registration and must be paid by bank check, money **order or personal check.**

Cash will *not* be accepted.

CHANGE OF COURSE

A fee of $2.00 is required of all students for each course change with the exception of a course change which is necessitated by the cancellation of a scheduled course by the Dean.

NO CHANGE OF COURSE WILL BE PERMITTED AFTER THE 2nd REGULARLY SCHEDULED MEETING OF THE CLASS.

TEACHER VOUCHERS

Individual students holding valid teacher vouchers from Worcester State College are exempt from tuition charges *only*—and *only* for one course which may not exceed three (3) credits.

Vouchers will be honored for one (1) calendar year from the date of issuance. This year includes three semesters (the summer sessions are considered to be one semester).

Vouchers are *not* transferrable under any circumstances.

ALL REQUIRED FEES MUST BE PAID AT THE TIME OF REGISTRATION WHEN THE TEACHER VOUCHER IS PRESENTED.

VETERANS' BENEFITS

World War II and Korean War veterans pay only fees.

Vietnam Era veterans who are eligible for benefits *must pay* full tuition and fees for courses taken in the Division of Graduate Education and Special Programs (in accordance with Chapter 457 Acts of 1976). They will receive their V.A. benefits on a monthly basis. The schedule of monthly payments to Vietnam Era veterans appears below. A Certificate of Exemption for Vietnam Era veterans is *not* applicable toward payment of tuition and fees for courses taken in this division. Therefore, a*ll* Vietnam Era veterans are required to make full payment for tuition and fees for these courses.

CHAPTER 34 G.I. BILL EDUCATION MONTHLY RATES (EFFECTIVE 10/1/76)
INSTITUTIONAL TRAINING

	Fulltime	¾	½
Veteran	$292.00	$219.00	$146.00
Veteran & 1 Dep.	$347.00	$260.00	$174.00
Veteran & 2 Dep.	$396.00	$297.00	$198.00
Veteran & 3 Dep.	$420.00	$315.00	$210.00
Veteran & 4 Dep.	$444.00	$333.00	$222.00
Veteran & 5 Dep.	$468.00	$351.00	$234.00
Veteran & 6 Dep.	$492.00	$363.00	$246.00
Veteran & 7 Dep.	$516.00	$387.00	$258.00

All veterans must complete a form (available at the Office of Graduate Education and Special Programs) indicating their eligible status as approved by the Veterans Affairs Officer.

Veterans are responsible for familiarizing themselves with the requirements and procedures necessary for securing benefits and maintaining eligibility for benefits.

Veterans who have questions or problems regarding their legal benefits should contact:

Bill Metley or Dean Wheaton, Veterans Affairs Officers
Room A208—Administration Building
Worcester State College
Telephone Number: 752-7700 (ext. 293, 348)

BASIC ECONOMIC OPPORTUNITY GRANTS

Individuals who have been awarded BEO Grants may use such grants to take course through the Division of Graduate Education and Special Programs providing that they enroll in a minimum of 2 courses per semester in a program leading to a baccalaureate degree.

For additional information, please contact:

Elizabeth Keogh
Financial Aid Office
Worcester State College
Telephone Number: 752-7700 (ext. 214, 238)

FINANCIAL AID

All inquiries regarding financial aid should be directed to:

Elizabeth Keogh
Financial Aid Office
Administration Building—Room A213
Worcester State College
486 Chandler Street
Worcester, MA 01602
Phone Number: 752-7000 (ext. 214, 238)

CANCELLATION OF COURSES

The Dean of the Division of Graduate Education and Special Programs reserves the right to cancel any course which does not secure sufficient enrollment or for any other reason deemed to be in the best interest of the Division and/or Worcester State College.

Students who have enrolled in a course which is cancelled by the Dean may transfer into another course (on a space-available basis) without the imposition of a course change fee or may receive a full refund of tuition and fees.

CHANGE OF REGISTRATION STATUS

A student may change from credit to audit status up to the last scheduled class meeting. No refund will be made in such cases.

A student may change from audit to credit status up to the beginning of the 4th regularly scheduled class meeting. In such cases, the student must pay the full tuition at the time of the change. After the beginning of the 4th regularly scheduled class meeting, no such changes will be made.

WITHDRAWAL AND REFUNDS

FAILURE TO ATTEND CLASS MEETING DOES *NOT* AUTOMATICALLY CONSTITUTE OFFICIAL WITHDRAWAL FROM A COURSE.

Official notice of withdrawal must be made on the form which is available at the Office of Graduate Education and Special Programs.

The official date of withdrawal is determined by the date on which the completed form is receive by the Office.

If the proper procedure for withdrawal is not followed, students will receive an official grade of "E" for the course.

Eligibility for tuition refund is based on the academic calendar and is prorated as follows:

FOR 6-WEEK COURSES:

Withdrawal prior to the second class meeting	100%
Withdrawal prior to the third class meeting	80%
Withdrawal prior to the fourth class meeting	60%
Withdrawal after the fourth class meeting	none

FOR 3-WEEK COURSES AND 2-WEEK WORKSHOPS:

Withdrawal prior to first class meeting	100%
Withdrawal prior to second class meeting	80%
Withdrawal after the second class meeting	none

FEES ARE NOT REFUNDABLE UNDER ANY CIRCUMSTANCES OTHER THAN THE DECISION BY THE DEAN TO CANCEL A COURSE.

The state refunding process normally requires a minimum period of 45 days from the date on which the refund request is submitted by the Division of Graduate Education and Special Problems.

The deadline for withdrawal from a course is the 4th regular class meeting (for a 6-week course) and the 2nd regular class meeting for a 2-week or 3-week course. Students with extenuating circumstances must secure the approval of the Dean in order to withdraw from a course after the deadline.

A grade of "W" will be officially recorded if a student withdraws from a course.

GRADUATE RECORD EXAMINATION AND/OR MILLER ANALOGY TEST

The Graduate Record Examination or The Miller Analogy Test is required of students applying for admission to the Graduate Division.

This requirement is waived if the applicant holds a Master's degree awarded by an accredited institution of higher education.

The Graduate Record Examination is administered at Worcester State College. During the 1977-1978 academic year, it will be held on the following dates:

October 15, 1977
December 10, 1977
January 14, 1978
February 25, 1978 (General Aptitude Test *only*)
April 22, 1978
June 10, 1978

Information regarding the Miller Analogy Test may be obtained by contacting The Counseling Center at either Clark University or Holy Cross College, both of which administer this examination.

Foreign students who lack a ready facility with the English Language may elect to fulfill this requirement by taking the TOEFL Test (Test of English As a Foreign Language). Information regarding this test can be obtained by contacting:

TOEFL
Box 899
Princeton, N.J. 08540

COMPREHENSIVE EXAMINATION

Effective July 1, 1975 Comprehensive Examinations will be given in the area of concentration or program of study. Matriculated students should consult their program advisor regarding specific requirements for the comprehensive examination in their area or program.

CANDIDACY FOR GRADUATE DEGREES AND CERTIFICATES

Matriculated graduate students should complete an INTENT TO GRADUATE FORM at the time they enroll in their final semester of graduate study. The form is available at the Office of Graduate Education and Special Programs.

Commencement exercises are held in the spring of the academic year. Students who complete all requirements for their program of graduate study during the fall semester or during the summer sessions should contact the Office of Graduate Education by MARCH 15th if they intend to participate in the spring commencement ceremonies.

OFFICIAL TRANSCRIPTS AND GRADE REPORTS

Official transcripts of courses taken in the Division of Graduate Education and Special Programs are issued only upon the written request of the student concerned. All transcripts which are issued will reflect the student's cumulative academic record. No request for a partial transcript will be honored.

All requests for transcripts must be made by the student concerned on the form which is available at the Office of Graduate Education and Special Programs and must be accompanied by the appropriate fee of $1.00 per copy. There is no charge for transcript requests addressed to the Registrar, Worcester State College. The request normally takes 48 hours to process. Transcripts which are to include the final grades of the existing session or semester will normally be available approximately 4 weeks after the close of the session or semester.

Grade reports will be mailed by the Division of Graduate Education and Special Programs as soon as they are processed to students who have no outstanding bills at the college.

CANCELLATION OF CLASS MEETINGS

In the event of cancellation of class sessions due to inclement weather or other unforseen circumstances affecting the operation and/or maintenance of college facilities, the community will be informed via radio.

The following radio stations will be advised and will carry notices of any official cancellation: WBZ, WNCR, WNEB, WORC, WSRS, WTAG.

DO NOT CALL THE OFFICE OF GRADUATE EDUCATION AND SPECIAL PROGRAMS FOR THIS INFORMATION—major difficulties occur when the phone lines are tied up by these calls.

Every effort will be made to provide adequate notice of cancellation in order to avoid inconveniencing students and faculty who might be affected by any cancellation.

SPECIAL NOTICE—STATE CERTIFICATION

Courses leading to Massachusetts certification as secondary school and special subject teachers are available through the Division of Graduate Education and Special Programs for both undergraduate and post-baccalaureate students.

For further information please contact:

Mr. Richard Sine, Director of Professional Experiences

or

Dr. David Quist, Acting Associate Dean of Graduate Education

Teacher certification is the responsibility of the State Department of Education. Inquiries relating to certification should be addressed to:

The Bureau of Teacher Certification and Placement
Massachusetts State Department of Education
182 Tremont Street
Boston, Mass. 02111

COURSE NUMBERING SYSTEM

The course numbering system is as follows:

8-000 level courses = lower series graduate level courses carrying graduate credit. Qualified undergraduate students may enroll for undergraduate credit with the permission of the instructor.

9-000 level courses = upper series graduate level courses carrying graduate credit and open only to graduate students.

COURSE CREDITS

All courses carry three (3) credits unless otherwise indicated.

GRADUATE DIVISION

The Division of Graduate Education offers the applicant an opportunity to earn the following degrees:

MASTER OF EDUCATION
MASTER OF ARTS/MASTER OF SCIENCE
CERTIFICATE OF ADVANCED GRADUATE STUDY

A graduate degree is evidence of scholarly accomplishment, academic achievement, creative and critical ability, and the capacity to apply and interpret what has been absorbed by the individual student in an ethical academic manner.

The primary objective of Graduate Education at Worcester State College is the individual student's professional and personal improvement. To attain this goal, the Division of Graduate Education and Special Programs continually strives to provide opportunities, through its various programs of study, for the development of professional competencies in a number of disciplines.

This endeavor is pursued in an atmosphere which is both challenging and rewarding since the faculty and staff of the Graduate Division are aware of their responsibility to provide creative leadership to the citizens of the Commonweath of Massachusetts.

GRADUATE DEGREE PROGRAMS

Master of Education Degrees with concentrations in:

Adult Education
Audiovisual Media
Biology
Chemistry
Community Education
Computer Science
Counselor Education
Early Childhood Education
Elementary Education
English
Health Education
History
Language Arts
Leadership and Educational Administration
Library Science/Media
Mathematics
Natural Science
Reading
Secondary Education
Social Studies for the Elementary Teacher
Spanish
Special Needs
Urban Education

Master of Education—Certificate of Advanced Graduate Study with concentration in:

School Psychology

Master of Arts/Master of Science Degrees in:

Biology

Certificate of Advanced Graduate Study in:

Counselor Education
Leadership and Educational Administration
Professional Administration with a Concentration in Language Arts and Reading

OBJECTIVES OF GRADUATE EDUCATION

The objectives of Graduate Education at Worcester State College are:

1. To provide the student with greater depth and breadth of experience, building on the foundation of an undergraduate education;
2. To facilitate the integration of classroom instruction and professional experience by emphasizing applied experience, responding to current issues and utilizing professionals from outside the academic community as well as those within it;
3. To enable students to update, expand, and/or increase specialization of knowledge and skills in their field of competence, thereby equipping them to function more adequately as professionals;
4. To stress the development of independent inquiry and investigative skills so that classroom experiences will be the beginning and not the end of professional education;
5. To encourage personal growth by exposing students to a variety of viewpoints and issues in an atmosphere of exploration, allowing the students to clarify both their professional and personal philosophies and goals.

Additionally, as a publicly supported institution, a major aim is to provide this high calibre of graduate education in a manner which affords accessibility to the broadest possible spectrum of the population qualified for and desirous of such a program.

ADMISSION TO POST-BACCALAUREATE STUDY

General Requirements—The general requirements for admission to post-baccalaureate study at Worcester State College are in accordance with the campus regulations. Specifically, a student shall:

1. Have completed a four-year college course of study and hold an accepted baccalaureate degree from an institution of higher education which has been accredited by the appropriate regional accrediting association;
2. Have attained a cumulative grade point average of 2.75 or above;
3. Satisfactorily meet the professional, personal, scholastic, and other standards for graduate study, including qualifying examinations.

Applicants should consult the Admission Form for all details regarding general requirements for admission to graduate study.

Concentration Area Requirements—Applicants should consult the information contained under the concentration area in which they are interested for specific admission requirement.

Notification of Admission to Post-Baccalaureate Study—Following the submission of all required data and information for admission, a review of the applicant's eligibility by the appropriate faculty and the Dean of Graduate Education occurs. The applicant is officially notified by the dean of the decision which has been reached on his/her application. Only the Dean of Graduate Education can issue an official acceptance for admission to the Graduate Division.

MATRICULATION

In order to become a candidate for a degree, a student must formally apply for matriculation and be accepted into a specific program. Students enrolled in courses, but not formally matriculated, are considered non-matriculated students. The Division of Graduate Education and Special Programs recommends that graduate students take no more than two (2) courses prior to applying for matriculation and being accepted into a degree program.

A student who matriculates in his/her program is assigned an advisor in the particular field of study, has an opportunity to develop an approved program of study, and is not affected by any subsequent

changes in requirements for the degree.

For admission to graduate study, applicants must:

1. Submit the authorized application form (two pages), completing all information requested to the Graduate Office of Worcester State College.
2. Request that an official copy of undergraduate college transcript(s) be sent to the Graduate Office of Worcester State College.
3. Request that an official copy of graduate college transcript(s), if appropriate, be sent to the Graduate Office of Worcester State College.
4. Provide official scores on either the Graduate Record Aptitude Examination or the Miller Analogies Test. This requirement is waived in the case of an applicant who has earned a graduate degree at an accredited institution of higher education prior to requesting admission to the Graduate Office of Worcester State College.
5. Submit recommendations from two (2) individuals who are familiar with the candidate's academic and professional qualifications. These recommendations should be submitted on the authorized form which is included in the admissions material available at the Graduate Office of Worcester State College.
6. Be interviewed by a member of the professional staff of the Division of Graduate Education at Worcester State College.

Application materials should be submitted to the Graduate Office in accordance with the following schedule:

1. Prior to April 15th for admission in the fall semester.
2. Prior to October 2nd for admission in the spring semester.
3. Prior to March 2nd for admission in the summer semester.

All credentials must be on file in the Graduate Office of Worcester State College and must have been reviewed by the appropriate department prior to registration for the first semester of study as a matriculated student. Admission to the Graduate School is conditional upon the successful attainment of the baccalaureate degree.

Candidates may be admitted on either an "unconditional" or a "conditional" basis.

Applicants accepted for admission to the Graduate School will receive confirmation of acceptance and appropriate materials relating to the successful completion of requirements for the graduate degree, as well as a Certificate of Residence Form (Massachusetts residents only). All forms should be completed and returned to the appropriate office as required.

GUIDELINES

Master of Education Degree Program

Admission Requirements—Graduates who posses a baccalaureate degree from an accredited college or university are eligible for admittance

to the Graduate Division. Applicants should have a cumulative average of 2.75 or above. Candidates for admission are required to submit the completed authorized application form which is available at the Graduate Office of Worcester State College. Requirements and procedures for admission to the Graduate Division are specified on the application form. The applicant must comply with these requirements and procedures. All documents and supporting data required for admittance become the property of the Graduate Division and will not be returned. When deficiencies exist in an applicant's entrance requirements, he/she may be admitted on a conditional basis in exceptional cases upon the approval of the appropriate Department Chairperson or Program Coordinator and the Dean of Graduate Education. The conditional nature of the admission is removed upon successful completion of the conditions stipulated in the candidate's letter of acceptance. Admission to a Concentration area within the Graduate Program is at the discretion of the appropriate Chairperson or Program Coordinator and the Dean of Graduate Education. An applicant is not officially admitted to matriculation until he/she has been notified of acceptance by the Dean of the Graduate Division in writing.

General Requirements—The minimum quantitative requirements for the degree is thirty-three (33) semester hours of credit. At least fifty percent (50%) of course credits must be taken in courses which are exclusively at the graduate level. (9-000). A maximum of twelve (12) credits of "B" or above may be accepted toward the graduate degree from a Massachusetts State College. A maximum of six (6) credits of "B" or above may be accepted toward the degree from another accredited institution of higher education. A minimum of twenty-one (21) semester hours must be earned at Worcester State College. Acceptance or denial of transfer credits will be the responsibility of the Dean of the Graduate School and the appropriate Program Coordinator, in conjunction with the Graduate Committee.

It is the responsibility of the student to contact his/her Program Coordinator during the first semester of acceptance to plan the program of study. (See Steps in Master's Program.) All work for the degree must be completed within a period of six (6) years. A minimum average of "B" or above is required to earn the degree. Two grades of "C" or below will necessitate program review by the appropriate Department Chairperson or Program Coordinator and the Dean of the Graduate Program. Twenty-seven (27) credit hours of approved course work toward the degree must be "B" or above. Graduate students are graded on the basis of a policy which has been approved by the Graduate Committee, the All College Council, and the President of Worcester State College. Students must employ the authorized form in order to officially withdraw from a course. Withdrawal after the third (3rd) meeting of the class will carry a grade of "W" (withdrawn) and will be so recorded.

The Dean of the Graduate Division reserves the right to periodically review the performance of graduate students in accordance with the academic standards of the graduate program and of Worcester State College. In the event that a stu-

dent is unable to fulfill the requirements for a course due to justifiable extenuating circumstances such as illness, an instructor may permit an extension of eight (8) weeks into the following semester to complete the requirements. The student will receive a grade of "I" (incomplete). If, by the end of this period, (eight weeks into the following semester) the student has not satisfactorily completed the course requirements, a permanent grade of "E" will be recorded. Every student is required to pass an oral and/or written comprehensive examination in his/her field of concentration, prior to being eligible to receive the degree. A candidate for the degree who fails the comprehensive examination is permitted one further opportunity to satisfy this requirement. The re-examination must take place by the end of the succeeding academic year. The comprehensive examination will relate to the student's course work and area of concentration. Students may avail themselves of the Thesis Option in those departments where such an option is designated.

It is the responsibility of eligible students to signify their intention to graduate in a given academic year. The authorized form signifying Intent to Graduate is available at the Office of Graduate Education. The form must be submitted to the Dean of Graduate Studies no later than March 15th of the Academic year in which graduation is desired. Regular attendance at class is assumed. More than two absences without sufficient reason and notification to the professor may constitute a failure for the course.

Curricular Requirements—Nine (9) credit hours of graduate course work must be completed in the following—Advanced Research in Education (3 Credits); Advanced Philosophical Foundations of Education (3 Credits); Advanced Psychological Foundations of Education (3 Credits). Fifteen (15) to eighteen (18) credits in the field of concentration. Six (6) to nine (9) credit hours in approved electives.

Master of Arts and Master of Science Degree Program

A prospective candidate is urged to familiarize himself/herself with specific requirements of the area in which he/she intends to pursue the degree.

Admission Requirements—In general, graduates who possess a baccalaureate degree with a major in the appropriate department from an accredited college or university are eligible for admittance to the Graduate Division. Applicants should have a cumulative grade point average of 2.75 or above. Candidates for admission are required to submit the completed authorized application form which is available at the Graduate Office of Worcester State College. Requirements and procedures for admission to the Graduate Division are specified on the application form. The applicant must comply with these requirements and procedures. All documents and supporting data required for admittance become the property of the Graduate Division and will not be returned.

When deficiencies exist in an applicant's entrance requirements, he/she may be admitted on a conditional basis in exceptional cases upon approval of the appropriate Department Chairperson or Program Coordinator and the Dean of Graduate Education. The conditional nature of the admission is removed upon successful completion of the conditions stipulated in the candidate's letter of acceptance. Admission to a Graduate Program is at the discretion of the appropriate Department Chairperson or Program Coordinator and the Dean of Graduate Education. An applicant is not officially admitted to matriculation until he/she has been notified of acceptance by the Dean of the Graduate Division in writing.

General Requirements—The minimum quantitative requirements for the degree is thirty-three (33) semester hours of credit. At least fifty percent (50%) of course credits must be taken in courses which are exclusively at the graduate level. (9-000) A maximum of twelve (12) credits of "B" or above may be accepted toward the graduate degree from a Massachusetts State College. A maximum of six (6) credits of "B" or above may be accepted toward the degree from another accredited institution of higher education. A minimum of twenty-one (21) semester hours must be earned at Worcester State College. Acceptance or denial of transfer credits will be the responsibility of the Dean of the Graduate School and the Appropriate Program Coordinator, in conjunction with the Graduate Committee.

It is the responsibility of the student to contact his/her Program Coordinator during the first semester of acceptance to plan the program of study. (See Steps in the Master's Program.) All work for the degree must be completed within a period of six (6) years. A minimum average of "B" or above is required to earn the degree. Two grades of "C" or below will necessitate program review by the appropriate Department Chairperson or Program Coordinator and the Dean of the Graduate Program. Twenty-seven (27) credit hours of approved course work toward the degree must be "B" or above. Graduate students are graded on the basis of policy which has been approved by the Graduate Committee, the All College Council, and the President of Worcester State College. Students are evaluated as follows: A, B, C, or E. Students must employ the authorized form in order to officially withdraw from a course. Withdrawal after the third (3rd) meeting of the class will carry a grade of "W" (withdrawn) and will be so recorded. The Dean of the Graduate Division reserves the right to periodically review the performance of graduate students in accordance with the academic standards of the graduate program and of Worcester State College. In the event that a student is unable to fulfill the requirements for a course due to justifiable extenuating circumstances such as illness, an instructor may permit an extention of eight (8) weeks into the following semester to complete the requirements. The student will receive a grade of "I" (incomplete). If, by the end of this period (eight weeks into the following semester) the student has not satisfactorily completed the course requirements, a permanent grade of "E" will be recorded.

Every student is required to complete all requirements of the program in which he/she is matriculated. **Students may avail themselves of the Thesis Option in those departments where such an option is designated. It is the responsibility of eligible stu-**

dents to signify their intention to graduate in a given academic year. The authorized form signifying Intent to Graduate is available at the Office of Graduate Education. The form must be submitted to the Dean of Graduate Education no later than March 15th of the academic year in which graduation is desired. Regular attendance at class is assumed. More than two absences without sufficient reason and notification to the professor may constitute a Failure for the course.

Curricular Requirements—Please see requirements for specific programs.

Certificate of Advanced Graduate Study Degree Program

A prospective candidate is urged to familiarize himself/herself with specific requirements of the area in which he/she intends to pursue the degree.

Admission Requirements—Applicants must possess a master's degree and eighteen (18) hours of graduate work in the intended C.A.G.S. field from an accredited institution of higher education in order to be eligible for admittance to the Graduate Division. Applicants should have a cumulative grade point average of 2.75 or above in courses taken at the graduate level. Candidates for admission are required to submit the completed authorized application form which is available at the Graduate Office of Worcester State College. Requirements and procedures for admission to the Graduate Division are specified on the application form. The applicant must comply with these requirements and procedures.

All documents and supporting data required for admittance become the property of the Graduate Division and will not be returned. When deficiencies exist in an applicant's entrance requirements, he/she may be admitted on a conditional basis in exceptional cases upon the approval of the appropriate Department Chairperson or Program Coordinator and the Dean of Graduate Education. The conditional nature of the admission is removed upon successful completion of the conditions stipulated in the candidate's letter of acceptance. Admission to a Graduate Program is at the discretion of the appropriate Department Chairperson or Program Coordinator and the Dean of Graduate Education. An applicant is not officially admitted to matriculation until he/she has been notified of acceptance by the Dean of the Graduate Division in writing.

General Requirements—The minimum quantitative requirements for the degree is thirty (30) semester hours of credit. All of the Course credits must be taken in courses which are exclusively at the graduate level (9-000). All credits toward the C.A.G.S. degree must be taken at Worcester State College. No credits may be transferred into the program from another institution of higher education. Six (6) semester hours in the 9-000 series which have been taken at Worcester State College prior to admittance to the program and which are deemed applicable, may be transferred into the C.A.G.S. program. Any credits beyond these six (6) which a student would like to transfer into the C.A.G.S. program must be approved by the Department Chairperson or Program Coordinator and the Dean of Graduate Education. The transfer of additional credits must also be approved by the Graduate Education Committee. All work for the degree must be completed within a period of six (6) years.

Candidates for admission must contact his/her Program Coordinator during the first semester of acceptance to plan the program of study. (See steps in the C.A.G.S. Program.) A minimum scholastic average of "B" in courses taken for the degree program is required of all students enrolled in the program. A student who receives a grade lower than "B" will be placed on provisional status and could be terminated from the program by the decision of the Graduate Education Committee. Graduate students are graded on the basis of a policy which has been approved by the Graduate Committee, the All College Council, and the President of Worcester State College. Students are evaluated as follows: A, B, C, or E. Students must employ the authorized form in order to officially withdraw from a course. Withdrawal after the third (3rd) meeting of the class will carry a grade of "W" (withdrawn) and will be so recorded.

The Dean of the Graduate Division reserves the right to periodically review the performance of the graduate students in accordance with the academic standards of the graduate program and of Worcester State College. In the event that a student is unable to fulfill the requirements for a course due to justifiable extenuating circumstances such as illness, an instructor may permit an extension of eight (8) weeks into the following semester to complete the requirements. The student will receive a grade of "I" (incomplete). If, by the end of this period (eight weeks into the following semester) the student has not satisfactorily completed the course requirements, a permanent grade of "E" will be recorded. Every student is required to complete all requirements of the program in which he/she is matriculated. It is the responsibility of eligible students to signify their intention to graduate in a given academic year. The authorized form signifying the intent to Graduate is available at the Office of Graduate Education. The form must be submitted to the Dean of Graduate Education no later than March 15th of the academic year in which graduation is desired. Regular attendance at class is assumed. More than two absences without sufficient reason and notification to the professor may constitute a Failure for the course.

Curricular Requirements—Courses accredited toward the Certificate of Advanced Graduate Study may not duplicate courses taken by the student in either his/her undergraduate or master's program. Please see requirements for specific C.A.G.S. Programs.

Master of Education

CONCENTRATION IN ADULT EDUCATION

Worcester State College offers a unique program for present and prospective leaders who want to obtain a Master's degree in Education with a concentration in Adult Education. Course offerings in the program provide participants with an opportunity for specialization in adult basic education. The courses focus on the needs, backgrounds, and interests of individual participants.

The concentration is designed to serve the following:

1. Teachers of adult basic education;
2. Individuals who desire an advanced degree including public and private school teachers or administrators, community organizers, business, labor and union leaders, as well as individuals in related socia! fields;
3. Graduate and special students in other fields who wish to pursue interests in adult education.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Adult Education Concentration Courses (15 credits)

The student will select, with the approval of his/her guidance committee, fifteen (15) credits from among the following:

The Practice of Adult Education (3 credits)
Reading Needs of the Adult Learner (3 credits)
Community Power for Adults (3 credits)
Teaching the Illiterate Adult (3 credits)
Community School: Processes and Problems (3 credits)
Psychology of the Adult Learner (3 credits)
Programs for the Aging (3 credits)
Contrastive Syntax: The Psychology of Learning a Second Language and Derived Methodologies (3 credits)
Advanced ESL Methods and Materials (3 credits)
Program Planning for Adults (3 credits)
Internship in Adult Basic Education (3 credits)
History and Philosophy of Adult Education (3 credits)
Administration in Adult Education (3 credits)
Directed Study in Adult Education (1-6 credits)
Workshop in Adult Basic Education (3 credits)

Elective Courses (9 credits)

The student is expected to select, with the approval of his/her guidance committee, three (3) additional courses in education.

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the Adult Education concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

CONCENTRATION IN AUDIOVISUAL MEDIA

This concentration is intended to prepare students for leadership positions in the field of school audiovisual media service. The program includes courses that meet the Commonwealth's requirements for certification. Its main thrust is to offer those coming into the field, as well as those already working as specialists in audio-visual services, the opportunity to help implement a program of unified media, especially in the production of instructional media and learning resources.

The program is designed to:

1. Permit candidates to pursue scholarly study in the field of audiovisual media services in education and to provide them with an understanding of the role of media in education;
2. Provide an opportunity for preparation for professional level positions in either educational or commercial organizations where media services are required as well as for meeting certification requirements for audiovisual media specialists in the Commonwealth of Massachusetts.

Graduates will have mastered the ability to:

1. Administer an audiovisual media program within a school or school system.
2. Organize and implement in-service programs in audiovisual media at all school levels.
3. Demonstrate and apply the basic principles of cataloging as an aid to the organization of both print and non-print materials.
4. Serve as a consultant in the planning of facilities and the purchase of equipment to support a program of audiovisual services.
5. Assist in the selection and application of graphic and sound materials to facilitate learning with an understanding of their unique characteristics and their appropriateness to the learning or instructional problem involved.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general requirements for the degree of Master of Education.

Admissions to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Audiovisual Media Concentration Courses (18 credits)

Required of all students:

Communication Media (3 credits)

The student will select, with the approval of his/her guidance committee, at least five (5) courses from among the following:

Design and Preparation of Instructional Materials (3 credits)
Television Production I (3 credits)
Instructional Technology: Nature and Use (3 credits)
Instructional Non-Print Media Services (3 credits)
Educational Technology in the Design of Instructional Systems (3 credits)
Theories of Communication (3 credits)
Media Internship (3 credits)

Elective Courses (6 credits)

A student is expected to select, with the approval of his/her guidance committee, two (2) additional courses from among other offerings by the Media Department or from approved ancillary courses.

Comprehensive Examination

The comprehensive examination will consist of a number of written essay questions covering areas in the student's approved program of graduate study.

NOTE: Matriculants desiring certification by the Commonwealth of Massachusetts should consult their advisor immediately upon receiving official notification by the Dean of the Division of Graduate Education of admission to the concentration.

CONCENTRATION IN BIOLOGY

The program for a Master of Education degree with a concentration in Biology is directed toward expanding a knowledge of the principles of the biological sciences. The concentration seeks to coordinate and integrate professional graduate work in education with advanced study of the discipline of Biology.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

The applicant shall, prior to admission into the concentration, have earned a minimum of twenty-four (24) credits in Biology and a minimum of eighteen (18) credits in the ancillary sciences (chemistry, physics, and mathematics) taken at an accredited institution of higher education.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Biology Concentration Courses (15 credits)

The student will select, with the approval of his/her guidance committee, fifteen (15) credits from the offerings of the Biology department. A minimum of nine (9) credits shall be in courses at the 9-000 level of study. The remaining six (6) credits may be taken at the 8-000 level.

Elective Courses (9 credits)

A student is expected to select, with the approval of his/her guidance committee, nine (9) additional credits in education.

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the Biology concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

CONCENTRATION IN CHEMISTRY

This concentration is mainly designed for primary and secondary school teachers who wish to broaden their background in chemistry. However, the program is flexible enough to accommodate individuals with various background and goals, such as:

1. Broadening the student's background in the natural sciences;
2. Advancing his/her professional training in chemistry by offering the opportunity to take additional courses in chemistry and/or by engaging in original research.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

In addition, the candidate must have taken the following courses:

General Chemistry I
General Chemistry II
College Algebra

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Chemistry Concentration Courses (15 credits)

Required of all students unless previously taken:

Chemistry of Carbon Compounds (3 credits)
Physical Chemistry—A Life Sciences Approach (3 credits)

The student is expected to select, with the approval of his/her guidance committee, three (3) courses from among the following courses:

Modern Biochemistry
Environmental Chemistry
*Instrumental Analysis
*Advanced Inorganic Chemistry
*Qualitative Organic Analysis
*Natural Products
*Special Topics in Physical Chemistry
Case Studies in the History of Science
Chemistry and Our Environment
Laboratory Workshop on Natural Science
Science, Technology, and Society
Any 9-000 level course in Chemistry not listed above

*No more than two (2) of these courses may be selected and approved.

Elective Courses (9 credits)

The student will select, with the approval of his/her guidance committee, three (3) additional courses in Education.

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the Chemistry concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

CONCENTRATION IN COMMUNITY EDUCATION

The major objective of this concentration is to provide an area for students to develop excellence in the field of community education. As leaders in this

field of education, students will have the opportunity to sharpen their skills in a variety of classroom and field experiences. The program is interdisciplinary in nature and is based to a large extent on the background, academic and experiential, that students bring to it. The program seeks to broaden and deepen the students' commitment to the philosophy of community education, to develop skills in interpersonal and institutional relationships, and to provide theoretical as well as practical experience in this field.

Additional program objectives are to develop students' backgrounds in community education philosophy, its process and programs. They will demonstrate an understanding of the details of the community education process and of the programs offered by the community schools. The program will include an understanding of the institutions, leadership, and the agencies involved in the community, along with the ability to identify and work with these components. The students will learn how to work with people of the community in identifying their needs and to develop procedures to meet these needs. Students will be able to identify community institutions that can and will respond to the expressed needs.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Area I (9 credits)

The student will select, with the approval of his/her guidance committee, three (3) of the following four (4) courses:

Organizational Patterns of the Community School (3 credits)
Community Communication and Organization (3 credits)
The Community School: Processes and Problems (3 credits)
The Community School: It's Administration and Supervision (3 credits)

Area II (3 credits)

The student will select, with the approval of his/her guidance committee, one (1) of the following three (3) courses:

Special Problems in Community Education (3 credits)
Internship in Program Development in Community Education (3 credits)
Independent Study in Community Education (3 credits)

The interdisciplinary nature of the program focuses on three (3) clusters which are appropriate for other aspects of Community Education:

Cluster I—Adult Education (maximum of 12 credits)

The History and Philosophy of Adult Education (3 credits)
Teaching the Illiterate Adult (3 credits)
Psychology of the Adult Learner (3 credits)
Programs for the Aging (3 credits)
Administration in Adult Education (3 credits)

Cluster II—Leadership and Educational Administration (maximum of 12 credits)

Foundations in School Administration (3 credits)
Fundamentals of School Finance (3 credits)
Public School Administration (3 credits)
School Law II: Law for the Administrator (3 credits)
Grantsmanship for the Teacher and the Administrator (3 credits)

Cluster III—Community Development (maximum of 12 credits)

Community Politics and Policy (3 credits)
Leadership in Organizations (3 credits)
Volunteers in the Community (3 credits)
Social Theory (3 credits)
Social Psychology (3 credits)

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the Community Education concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

CONCENTRATION IN COMPUTER SCIENCE

This concentration is designed to provide fundamental training which will prepare graduates of the program for positions in education, commerce, industry, and government.

Computer Science courses are designed to provide theoretical and applied training in the use of computers. Introductory and service courses are structured to meet the needs of students with diverse backgrounds in a variety of fields. More advanced courses prepare students seeking careers in the computer science field.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)

Advanced Psychological Foundations of Education (3 credits)

Computer Science Concentration Courses (15 credits)

The student will select, with the approval of his/her guidance committee, fifteen (15) credits from among the suggested courses in Computer Science listed below:

Computer Principles (3 credits)
Computer Programming with FORTRAN IV (3 credits)
Advanced FORTRAN (3 credits)
Computer Programming with COBOL (3 credits)
Advanced COBOL (3 credits)
Using the Statistical Package for the Social Sciences—SPSS (3 credits)
Administrative Data Processing in Education (3 credits)
Numerical Methods Using Computers (3 credits)
Assembler Language: IBM 360/370 Programming (3 credits)
Programming with R.P.G. (3 credits)
Applied Information Systems (3 credits)
Seminar in Computer Science (3 credits)

Elective Courses (9 credits)

A student is expected to select, with the approval of his/her guidance committee, three (3) additional courses in education.

Comprehensive Examination

Selected members of the Computer Science faculty will assign programs in the area(s) that have been studied by the matriculant who will write the programs and then defend them.

CONCENTRATION IN COUNSELOR EDUCATION

This concentration is designed to assist individuals to become skilled in counseling and guidance by enabling them to develop their talents in an integrated and complete program. Each student is encouraged to develop basic counseling and psychological skills. In addition, students who are both motivated and qualified may seek further academic growth and development in the C.A.G.S. program in Counseling. Candidates who satisfactorily complete the Master of Education concentration in Counselor Education are eligible for state certification.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

In addition, the candidate must have taken the following courses:

Techniques of Counseling
Measurement and Evaluation *or* Tests and Measurement *or* Psychological Testing

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Counselor Education Concentration Courses (18 credits)

Required of all students:

Techniques of Counseling (3 credits)
Practicum in Counseling (6 credits)

The student is expected to select, with the approval of his/her guidance committee, three (3) of the following courses:

Group Counseling (3 credits)
Counseling and Psychotherapy (3 credits)
Organization and Administration of Guidance Services (3 credits)
Individualized Intelligence Appraisal—Binet (3 credits)
Individualized Intelligence Appraisal—Wechsler (3 credits)
Pupil Personnel Services (3 credits)
Measurement and Evaluation for Counselors (3 credits)
Counseling and Guidance in the Elementary School (3 credits)
Occupational Information (3 credits)
Counseling and Guidance Seminar (3 credits)
Psychology of Vocational Adjustment (3 credits)
Advanced Psychological Testing (3 credits)
Counseling the Physically Handicapped (3 credits)
Human Awareness and Career Development (3 credits)
Current Trends and Issues in Career Counseling (3 credits)

Elective Courses (6 credits)

The student is expected to select, with the approval of his/her guidance committee, two (2) additional courses in a related area.

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the Counselor Education Concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

CONCENTRATION IN EARLY CHILDHOOD EDUCATION

The Early Childhood Education program is designed to offer students the opportunity to develop and refine skills necessary to provide and manage quality programs for children under seven years of age in settings such as day care centers, nursery schools, Head Start programs, Montessori schools, kindergartens, and primary classrooms.

Opportunities are provided at two on-campus child centers as well as in public and private pre-schools and kindergartens for observation, testing, and clinical field experiences with children of varied ability levels, including special

needs children. In addition to those who plan to teach, supervise or administer programs for young children, the curriculum is appropriate for parents of young children, health-care professionals, psychologists, sociologists, social workers, early childhood specialists who plan to own and operate private pre-schools, and others who work with children under seven.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Early Childhood Education Concentration Courses (15 credits)

Methods and Materials in Early Childhood Education (3 credits)
Curriculum in Early Childhood Education (3 credits)
Intellectual Development in Early Childhood Education (3 credits)
Supervision and Administration of Programs for Young Children (3 credits)
Seminar in Early Childhood Education (3 credits)

Elective Courses (9 credits)

The student will select, with the approval of his/her guidance committee, three (3) additional courses in Early Childhood Education. Below are listed some suggested elective courses:

Practicum in Early Childhood Education (3 credits)
Language Development in Young Children (3 credits)
The Exceptional Child (3 credits)
Children's Literature and Storytelling in Early Childhood Education (3 credits)
Case Studies of Young Children (3 credits)
Evaluation of Young Children (3 credits)
The Pre-School Child with Special Needs (3 credits)
Developing Materials for Young Children with Special Needs (3 credits)
Independent Research in Early Childhood Education (3 credits)
Evaluation and Remediation Techniques for Young Children with Special Needs (3 credits)
Special Problems in Early Childhood Education (3 credits)
Development of Mathematics Activities for Children Under Six Years (3 credits)

With the permission of the matriculant's guidance committee, additional elective courses in related fields may be substituted.

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the Early Childhood Education concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

CONCENTRATION IN ELEMENTARY EDUCATION

The purpose of this concentration in Elementary Education is to provide a general background in major areas of contemporary elementary education. The candidate for the degree is expected to select a broad variety of courses in areas of special interest, or in areas in which the student may believe that he/she is deficient.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

In addition, the candidate must:

1. Have received a baccalaureate degree from an institution which offers an accredited program in teacher education.
2. Hold a teaching certificate in elementary education.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Elementary Education Concentration Courses (6 credits)

Seminar in Current Issues in Elementary Education (3 credits)
Theory and Research in the Elementary Curriculum (3 credits)

Elective Courses (18 credits)

The student will select, with the approval of his/her guidance committee, six (6) additional courses in Education. Suggested electives include the following:

Communication Disorders

Speech and Language Development (3 credits)
Language Disorders in Children (3 credits)
Identification and Remediation of Hearing Disorders in Public School (3 credits)

Counselor Education

Principles of Guidance (3 credits)
Individual Intelligence Appraisal—Binet (3 credits)
Individual Intelligence Appraisal—Wechsler (3 credits)

Community and Urban Education

Urban Education (3 credits)
Community School: Processes and Problems (3 credits)

Early Childhood Education

Curriculum for Early Childhood Education (3 credits)
Intellectual Development in Early Childhood Education (3 credits)

Elementary Education

Career Education in the Elementary School (3 credits)
Elementary School Curriculum for the 70's (3 credits)
Comparative Education (3 credits)
Art for the Classroom Teacher (3 credits)
Teaching the Slow Learner (3 credits)
School Law I: Law for the Teacher (3 credits)
Humanizing Social Studies in the Elementary School (3 credits)

Leadership and Educational Administration

Organization and Administration of the Elementary School (3 credits)
The Elementary School Principal (3 credits)

Reading and Language Arts

Enriched Language Arts in the Elementary School (3 credits)
Current Trends in the Teaching of Reading
Teaching Language and Reading in the Inner City (3 credits)
Diagnosis and Correction of Reading Difficulties (3 credits)
Individualizing Reading and Language Arts in the Elementary School (3 credits)
Advanced Study of Children's Literature in the Language Arts and Reading Program (3 credits)
Creative Writing for Pupils in the Elementary School (3 credits)

Special Needs

Developmental Patterns of Children with Special Needs (3 credits)
Analysis and Interpretation of Children's Behavior and Learning Environment (3 credits)
Classroom Management Techniques (3 credits)

Media

Design and Preparation of Instructional Materials (3 credits)
Selecting and Evaluating Elementary School Learning Resources (3 credits)

Psychology

Psychology of Subnormal and Unadjusted Children (3 credits)
Adolescent Psychology (3 credits)

NOTE: Courses which have been taken by the student at the undergraduate level may not be repeated at the graduate level.

Comprehensive Examination

Each matriculant is required to pass an oral comprehensive examination in the Elementary Education concentration. Questions are forwarded to the candidate one (1) week in advance of the scheduled examination date. Members of the comprehensive committee are free to ask additional, pertinent questions of the candidate.

CONCENTRATION IN ENGLISH

The Worcester State College English Department offers a variety of graduate courses designed to respond to a wide spectrum of personal, community, academic, and professional goals. The concentration program provides training and expertise for careers in teaching, research, writing, editing, journalism, government service, and others.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

The applicant shall, prior to admission into the concentration, have earned eighteen (18) credits in English taken at an accredited institution of higher education.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

English Concentration Courses (18 credits)

The student will select, with the approval of his/her guidance committee, eighteen (18) credits from the four (4) areas of the concentration: Skills; Aspects of Literature; American Literature; English and European Literature.

Skills

Approaches to the Literary Experience (3 credits)
Linguistics (3 credits)
Techniques of Journalism (3 credits)
History of Literary Criticism (3 credits)
History of the English Language (3 credits)
Principles of Journalism (3 credits)
Techniques of Creative Writing (3 credits)

Aspects of Literature

Women Writers (3 credits)
The Minority Experience in Literature (3 credits)
History of Science Fiction (3 credits)
Literature and Psychology (3 credits)
Film and Literature (3 credits)
The Adolescent in Literature (3 credits)

Literature of the First World War (3 credits)
Literature and Social Change (3 credits)
The City in Literature (3 credits)
Utopia in the 20th Century (3 credits)
Special Problems in Literature (3 credits)

American Literature

The Colonial Experience (3 credits)
Poe, Hawthorne, Melville (3 credits)
American Civil War Literature (3 credits)
The Romantic Flowering (3 credits)
Whitman to Ginsberg (3 credits)
Realism and Naturalism (3 credits)
The American Novel of the 20th Century (3 credits)

English and European Literature

Medieval Literature (3 credits)
The Drama to 1642 (3 credits)
The Renaissance (3 credits)
The 17th Century (3 credits)
The Development of the Novel (3 credits)
Blake, Wordsworth, Coleridge (3 credits)
The 19th Century English Novel (3 credits)
Victorian Poetry (3 credits)
The "Victorian" Female (3 credits)
Modern Drama (3 credits)
Shakespeare I (3 credits)
Shakespeare II (3 credits)
The Age of Reason (3 credits)
The Romantic Movement: Influence on the 20th Century (3 credits)
Romantic Poetry: Shelley, Byron, Keats (3 credits)
The Worlds of Charles Dickens (3 credits)
Modern Poetry (3 credits)
20th Century Verse Drama (3 credits)
Seminar (3 credits)

Elective Courses (6 credits)

A student is expected to select, with the approval of his/her guidance committee, two (2) additional courses in a related area.

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the English concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

CONCENTRATION IN HISTORY

The Department of History—Political Science offers a varied program of graduate courses in both history and historiography. The program is intended to provide the individual with a broad background in historical studies which may be applied to careers in public service, civil service, research and teaching. The program also offers a unique opportunity to study history on the graduate level for individual self-enrichment.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

History Concentration Courses (18 credits)

Required of all students:

Study and Writing of History (3 credits)

The student will select, with the approval of his/her guidance committee, one (1) course from each of the following tracks and two (2) other courses in any of the tracks. Courses listed in each track are suggested courses.

Track I: United States History

Civil War and Reconstruction (3 credits)
Age of Jackson (3 credits)
History of the American Indian (3 credits)
Isolationism in 20th Century United States (3 credits)
United States Foreign Policy (3 credits)
Immigration in United States History (3 credits)
20th Century United States History (3 credits)

Track II: European History

20th Century Europe (3 credits)
20th Century France (3 credits)
20th Century European Intellectual History (3 credits)
History of Europe—1815-1914 (3 credits)

Track III: Non-United States and Non-European History

Middle East History (3 credits)
Russia and the Middle East (3 credits)
Soviet Foreign Policy (3 credits)
Russia in the 20th Century (3 credits)
China in the 20th Century (3 credits)
Japan in the 20th Century (3 credits)

Elective Courses (6 credits)

The student will select, with the approval of his/her guidance committee, two (2) additional courses in education.

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the History concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

CONCENTRATION IN LANGUAGE ARTS

The Master of Education degree which offers Language Arts as its area of concentration to interested and qualified candidates is designed

to help individuals become enriched and broadened in their understandings, attitudes, and competencies in an integrated language arts program so that they can help those pupils and/or teachers with whom they come in contact to realize their creative potential through all of the various means of effective and affective communications.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Language Arts Concentration Courses (15 credits)

The following courses are to be taken in sequence:

Advanced Study in the Teaching Language Arts and Reading (3 credits)
Creative Writing Pupils in the Elementary School (3 credits)
Teaching Language and Reading in the Inner City School (3 credits)
Research in the Teaching of Language Arts (3 credits)
*Lab Practicum in Language Arts in the Elementary School (3 credits)

*Summers only

Elective Courses (9 credits)

The student is expected to select, with the approval of his/her guidance committee, three (3) courses in education. Listed below are some suggested elective courses:

The Advanced Study of Children's Literature in the Language Arts and Reading Program (3 credits)
Current Trends in the Teaching of Reading (3 credits)
Education and the Gifted (3 credits)
Student-Centered Language Arts Curriculum (3 credits)
Urban Education (3 credits)
Reading in the Elementary School (3 credits)
Methodology in ESL Bilingualism (3 credits)
Language Disorders in Children (3 credits)
Development of Independent Language Activities for Elementary Schools (3 credits)
Learning Disabilities (3 credits)
Independent Research in Language Arts and Reading (3 credits)

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the Language Arts concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

CONCENTRATION IN LEADERSHIP AND EDUCATIONAL ADMINISTRATION

The concentration in Leadership and Educational Administration provides a selection of courses and experiences for students who are interested in developing the knowledge, skills, and other competencies needed to function effectively in educational leadership positions.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Leadership and Educational Administration Concentration Courses (15 credits)

Law for the Administrator (3 credits)
Public School Administration (3 credits)
or
Foundations of School Administration (3 credits)
Fundamentals of School Finance (3 credits)
Elementary School Curriculum for the 70's (3 credits)
or
Principles of Curriculum Development (3 credits)
or
Modern Trends in Curriculum Development (3 credits)
Organization and Administration of the Elementary School (3 credits)
or
Secondary School Administration (3 credits)
or
Educational Administrative Supervision and Evaluation (3 credits)
or
School Superintendency (3 credits)
or
Management Systems for Education Administrators (3 credits)

Elective Courses (9 credits)

The student will select, with the approval of his/her guidance committee, three (3) additional courses. Below are listed some suggested electives:

Collective Bargaining Strategies (3 credits)
Special Problems in School Administration (3 credits)
Seminar in Advanced Public School Administration (3 credits)
Seminar in Administrative Leadership (3 credits)
Human Relations for Administrators (3 credits)
Seminar in Educational Personnel Administration (3 credits)
Law for the Teacher (3 credits)
Administration of Programs for Children with Special Needs (3 credits)
Administrative Case Studies (3 credits)
Grantsmanship for the Teacher and the Administrator (3 credits)
The Community School: Processes and Problems (3 credits)
The Superintendent and the School Board (3 credits)
School Plant Development (3 credits)

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the Leadership and Educational Administration concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

CONCENTRATION IN MATHEMATICS

The main objectives of the program are:

1. To provide the necessary mathematical background for the teaching of mathematics at the elementary or secondary school level;
2. To provide the opportunity for further study of mathematics in a graduate program of study.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

In addition, the candidate must have taken the following courses:

Calculus I
Calculus II
Calculus III
Calculus IV

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Mathematics Concentration Courses (15 credits)

The student is expected to select, with the approval of his/her guidance committee, three (3) of the following courses:

Complex Variables (3 credits)
Analysis I (3 credits)
Abstract Algebra (3 credits)
Linear Algebra (3 credits)

The student is expected to select, with the approval of his/her guidance committee, two (2) of the following courses:

Linear Algebra (3 credits)
Ordinary Differential Equations (3 credits)
Analysis II (3 credits)
Topics in Geometry (3 credits)
Probability (3 credits)
Statistics (3 credits)
History of Mathematics (3 credits)
Special Problems in Mathematics (3 credits)

Elective Courses (9 credits)

The student is expected to select, with the approval of his/her guidance committee, three (3) additional courses in education.

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the Mathematics concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

CONCENTRATION IN NATURAL SCIENCE

The Natural Science concentration is structured to be a flexible program which readily adjusts to the educational requirements of the individual matriculant. Planning of the student's program of study will consider, in part, the following:

Science preparation;
Work experience;
Present and/or planned teaching or job assignment(s);
Enrichment or broadening of present knowledge;
Updating existing qualifications.

Courses for the completion of the degree requirements will be selected by the student, with the consent of his/her guidance committee, toward the goal of ensuring that the program of study best meets the student's needs. Students are advised to pursue courses of study in the following areas of science:

Earth Science
Life Science
Physical Science
Space Science

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

The applicant shall, prior to admission into the concentration, have earned eighteen (18) credits in science taken at an accredited institution of higher education.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Natural Science Concentration Courses (15 credits)

The student will select, with the approval of his/her guidance committee, fifteen (15) credits from suggested courses in Natural Science and/or related areas.

Man's Environment—The Oceans (3 credits)
Man's Environment—The Earth's Crust (3 credits)
Astronomy in the Space Age (3 credits)
Elementary Space Science (3 credits)
The Plant World and Its Evolution (3 credits)
The Animal World and Its Evolution (3 credits)
Chemistry of Carbon Compounds (3 credits)
Current Trends in Chemistry and Nutrition (3 credits)
Modern Topics in Environmental Science (3 credits)

See course listings in the departments of Biology and Chemistry for additional courses.

Elective Courses (9 credits)

A student is expected to select, with the approval of his/her guidance committee, three (3) additional courses in education.

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the Natural Science concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

CONCENTRATION IN READING

This concentration is designed to prepare personnel for such positions as:

a. Special teachers of reading
b. Reading clinicians
c. Reading consultants
d. Reading administrators or supervisors

Upon completion of the degree requirements of the concentration, a Reading Specialist Certificate is awarded. This certificate meets the guidelines established by the International Reading Association.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

In addition, all applicants must meet the following criteria:

1. Have taught for a minimum of three (3) years prior to completion of concentration and degree requirements.
2. Possess a teaching certificate or make application to the Concentration Coordinator to utilize special experience in the field.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Reading Concentration Courses (18 credits)

Required of all students:

Diagnosis and Correction of Reading Difficulties (3 credits)
*Lab Practicum: Remedial and Corrective Reading (6 credits)
A Reading course of the individual student's choice (3 credits)
Children's Literature (3 credits)
or
Children's Literature and Storytelling (3 credits)
Individual Intelligence Appraisal—Binet (3 credits)
or
Individual Intelligence Appraisal—Wechsler (3 credits)

Elective Courses (6 credits)

The student will select, with the approval of his/her guidance committee, two (2) additional courses from among the following areas:

Audiovisual Media
Communication Disorders
Counselor Education
Early Childhood Education
Elementary Education
Language Arts
Leadership and Educational Administration
Library Science/Media
Reading
Secondary Education
Special Needs
Urban Education

Comprehensive Examination

Upon completion of twelve (12) credits in reading courses, a candidate is eligible to take the required written comprehensive examination in the Reading concentration.

The examination is an essay test with several choices in each category for a approximate total of ten (10) questions. It is rated on a "Pass-Fail" basis.

CONCENTRATION IN SCHOOL LIBRARY SCIENCE/MEDIA

This concentration is intended to prepare students for leadership positions in school libraries. The program includes the courses which meet the Commonwealth's requirements for certification. Its main thrust is to offer those coming into the field, as those already serving as school library personnel, the opportunity to help implement a program of unified media by building, organizing, servicing, and administering a centralized collection of learning resources.

The program is designed to:

1. Permit candidates to pursue scholarly study in the field of library service in education and to provide them with an understanding of the role of media in education.

2. Provide an opportunity for preparation for professional positions in school libraries on the master's level as well as meeting certification requirements for school librarians in the Commonwealth of Massachusetts.

Graduates will have mastered the ability to:

1. Administer a unified media collection in a school.
2. Organize and teach programs of instruction in library skills.
3. Demonstrate the basic principles of cataloging as an aid to the organization of both print and non-print materials.
4. Serve as a consultant in the planning of facilities and collections for school libraries.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

School Library Science/Media Concentration Courses (18 credits)

Required of all students:

Communication Media (3 credits)

The student will select, with the approval of his/her guidance committee, at least five (5) courses from among the following:

Reference Sources and Services in the School Library/Media Center (3 credits)
Cataloging for a Learning Resources Center (3 credits)
Selecting and Evaluating Elementary School Learning Resources (3 credits)
Selection of Learning Resources for Young Adults (3 credits)
Administering the School Library/Media Center (3 credits)
The Reference Process: A Seminar (3 credits)
Advanced Cataloging and Classification (3 credits)
The Generic Library in the Communication Process (3 credits)
Modern Book Publishing (3 credits)
Bibliographic Data Processing (3 credits)
Library Networks and Teleprocessing (3 credits)
Seminar: The Teaching Role of the Librarian/Media Specialist (3 credits)
School Library/Media Center Practicum (3 credits)

Elective Courses (6 credits)

The student is expected to select, with the approval of his/her guidance committee, two (2) additional courses from among other offerings by the Media Department or from approved ancillary courses.

Comprehensive Examination

The comprehensive examination will consist of a number of written essay questions covering areas in the student's approved program of graduate study.

NOTE: Matriculants desiring certification by the Commonwealth of Massachusetts should consult their advisor immediately upon receiving official notification by the Dean of the Division of Graduate Education of admission to the concentration.

CONCENTRATION IN SECONDARY EDUCATION

This concentration is appropriate for persons with a baccalaureate degree who wish to explore secondary education in greater depth than they have as undergraduates:

to become more knowledgeable of theory and practice at a secondary level;

to examine and analyze their personal philosophies and aspirations related to secondary schooling;

and to keep abreast of changes in curriculum, instruction, and related aspects of secondary schooling.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

Admission to the concentration is gained through approval of the application for the Master of Education candidacy by the program Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Secondary Education Concentration Courses (12-21 credits)

The student will select, with the approval of his/her guidance committee, at least four (4) of the following courses:

Crucial Issues in Education (3 credits)
Team Teaching in the Middle School (3 credits) *or* Secondary School Team Teaching (3 credits)
Individualizing Instruction for Secondary School Students with Special Needs (3 credits) *or* Individualized Instruction in Secondary Schools (3 credits)

Evaluation of Classroom Learning (3 credits) *or* Educational Measurement and Evaluation (3 credits)
Career Education in the Secondary Schools (3 credits)
Principles of Curriculum Development (3 credits)
Comparative Education (3 credits)
The Challenge of Substitute Teaching (3 credits)
Humanistic Education (3 credits)
Classroom Interaction (3 credits)
Law for the Teacher (3 credits)
Education of the Self (3 credits)

One of the following courses may be substituted for *one* of the above:

Teaching Secondary School Mathematics (3 credits)
Teaching History with Fiction (3 credits)
Begone Dull Grammar (3 credits)
Student Language Arts Curriculum (3 credits)
Secondary Social Studies Curriculum (3 credits)

Another course in this category approved by the Program Coordinator.

Elective Courses (3-12 credits)

A student is expected to select, with the approval of his/her guidance committee three to twelve (3-12) additional credits in education, for example:

Approved advanced course in the student's major content area
Public School Administration (3 credits)
Community Education course
Adult Education course
Independent Study
Another course in this category approved by the guidance committee

Comprehensive Examination

In the last semester of the candidate's course work, the student will meet with his/her comprehensive examination committee for the purpose of making the following determinations:

1. Identification of the content and scope of the examination as well as its relationship to the matriculant based, to a great degree, upon the ideas submitted by the student;
2. Form of the examination; written, oral, or a combination of written and oral;
3. The date and time of the examination and, as applicable, the due date(s) of outlines and/or papers to be submitted to each of the committee members.

It is the intention of the secondary education department that these decisions be democratically arrived at by the candidate and the committee members.

CONCENTRATION IN SOCIAL STUDIES IN THE ELEMENTARY SCHOOL

This concentration is designed to give additional depth and scope to the teacher who is involved in implementing an elementary social studies curriculum. Through this concentration, a teacher can better help a student understand his or her cultural, social, political, economic, and physical environment and his or her personal participatory role in society.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

In addition, the candidate must hold an elementary school teaching certificate.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Social Studies in the Elementary School Concentration Courses (21 credits)

Required of all students:

Social Studies Curriculum and Materials (3 credits)
Improving Social Studies Teaching Strategies (3 credits)
Seminar in Social Education (3 credits)

The student will select, with the approval of his/her guidance committee, two (2) of the following courses:

Humanizing Social Studies (3 credits)
Individualizing Social Studies (3 credits)
Economic Education (3 credits)
Career Education (3 credits)
Museum Education (3 credits)
Intergrating Ethnic Studies into the Curriculum (3 credits)
Teaching Strategies for Multi-Ethnic Studies (3 credits)
Adapting Social Studies to the Child with Special Needs (3 credits)

The student will select, with the approval of his/her guidance committee, two (2) courses in one or more of the following Social Science disciplines:

Anthropology
Economics
Geography
History
Political Science
Sociology

Elective Courses (3 credits)

The student will select, with the approval of his/her guidance committee, one (1) additional course.

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the Social Studies in the Elementary School concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

CONCENTRATION IN SPANISH

The program is designed to upgrade the professional competence of Spanish teachers teaching Spanish to non-Spanish-speaking students or bilingual teachers of native-speaking students and teachers of English as a Second Language.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education as well as an adequate command of spoken and written Spanish.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Spanish Concentration Courses (21 credits)

The student will select, with the approval of his/her guidance committee, at least two (2) courses from each of the following groups and one (1) more according to his/her field of specialization.

Methods

ESL Methodology (3 credits)
Methods and Materials in the Bilingual Program (3 credits)
Foundations of Bilingual-Bicultural Education (3 credits)
Bilingual/Bicultural Curriculum: Theory, Design and Development (3 credits)
Contrastive Syntax: The Psychology of Learning a Second Language and Derived Methodologies (3 credits)

Socio-Cultural Studies

Travel Study Course (3 credits)
Latin American Culture and Civilization (3 credits)
The Latin Americans in the United States (3 credits)
History and Culture of Puerto Rico (3 credits)
Caribbean and Central American Culture (3 credits)
Spanish Summer Institute (3 credits)
Special Topics in Spanish (3 credits)
Spanish for Communication (3 credits)

Literature

Spanish-American Essayists (3 credits)
Contemporary Hispanic Theatre (3 credits)
Contemporary Spanish Novel (3 credits)
Literature of the Spanish Golden Age: Renaissance (3 credits)
Comparative Study of French and Spanish Literature (3 credits)
Contemporary Latin American Novel (3 credits)

The following courses are applicable to the *Methods, Socio-Cultural,* and *Literature* groups:

Seminars/Projects (3 credits)
Independent Study (3 credits)

Elective Course (3 credits)

A student is expected to select, with the approval of his/her guidance committee, one (1) additional course in education.

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the Spanish concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

CONCENTRATION IN THE CLASSROOM TEACHER OF CHILDREN WITH SPECIAL NEEDS

This concentration area is intended to:

1. Prepare the regular classroom teacher to incorporate children with mild special needs into his/her classroom.
2. Aid the regular classroom teacher to individualize his/her program in order that all children may have an appropriate program.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

In addition, all applicants must meet the following criteria:

1. Possession of a Massachusetts elementary, secondary, or special subject teaching certificate.
2. Have taken one (1) course from each of the following categories within the past five (5) years:
   a. Child Growth and Development
   b. Learning Theory
   c. Educational Measurement and Evaluation
   d. Developmental Reading

   Any of the above four (4) courses may be waived if the Program Coordinator deems such action appropriate.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)

Advanced Psychological Foundations of Education (3 credits)

Classroom Teacher of Children with Special Needs Concentration Courses (18 credits)

Required of all students:

Developmental Patterns of Children with Special Needs (3 credits)
Analysis and Interpretation of Children's Behavior and Learning Environment (3 credits)
Development and Implementation of an Individualized Educational Plan for Children with Special Needs (3 credits)

The student is expected to select, with the approval of his/her guidance committee, three (3) courses from the following areas:

a. Communication Disorders
b. Language Arts
c. Psychology
d. Reading
e. Special Needs
f. Urban Education

Elective Courses (9 credits)

The student is expected to select, with the approval of his/her guidance committee, three (3) courses in education.

Comprehensive Examination

The comprehensive examination may be taken after the required concentration courses and additional courses in the concentration area have been successfully completed. The examination is customarily in written form and must be scheduled one month prior to the date on which it is to be taken. The examinations are given in October, January, April, and June.

NOTE: It is recommended that students follow a sequential program of study.

CONCENTRATION IN THE GENERIC SPECIAL TEACHER OF SCHOOL AGE CHILDREN WITH MILD SPECIAL NEEDS

The Generic Special Teacher must plan, organize, and help implement programs for mildly handicapped children with the regular classroom. Major emphasis in this concentration is placed on the ability to work effectively with school personnel as well as with children. A thorough knowledge of regular classroom curricula, materials, and management is also required. The Generic Special Teacher must be competent in facilitating change process in school programs.

This program has been audited and approved by the Commonwealth of Massachusetts.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

In addition, all applicants must meet the following criteria:

1. Possession of a Massachusetts elementary, secondary, or special subject teaching certificate.
2. Have taken one (1) course from each of the following categories within the past five (5) years:
   a. Child Growth and Development
   b. Learning Theory
   c. Educational Measurement and Evaluation
   d. Developmental Reading
3. Three (3) years of teaching experience.
4. The student must also be able to participate in the Practicum. If the student is a resource room teacher, 180 hours must be devoted to such indirect services as in-service training; material demonstrations; parent conferences; core evaluations; individual diagnoses. Regular teachers are not able to participate in the Practicum unless they take a leave of absence in order to fulfill this requirement. Sites for the Practicum can be provided by Worcester State College.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Generic Special Teacher of School Age Children with Mild Special Needs Concentration Courses (27 credits)

Normal Development of Speech and Language (3 credits)
Developmental Patterns of Children with Special Needs (3 credits)
Analysis and Interpretation of Children's Behavior and Learning Environment (3 credits)
Development and Implementation of an Individualized Educational Plan for Children with Special Needs (3 credits)
Classroom Management Techniques for Children with Special Needs (3 credits)
Program Development and Evaluation for the Generic Special Teacher (3 credits)
Consulting and Interpersonal Skills for the Generic Special Teacher (3 credits)
Practicum for the Generic Special Teacher (6 credits)

Comprehensive Examination

The comprehensive examination may be taken after the following courses have been taken:

Developmental Patterns of Children with Special Needs
Analysis and Interpretation of Children's Behavior and Learning Environment

Development and Implementation of an Individualized Educational Plan for Children with Special Needs
Program Development and Evaluation for the Generic Special Teacher
Consulting and Interpersonal Skills for the Generic Special Teacher

This examination is customarily in written form and must be scheduled one month prior to the date on which it is to be taken. The examinations are given in October, January, April, and June.

NOTE: It is recommended that students follow a sequential program of study.

CONCENTRATION IN URBAN EDUCATION

The primary objective of this concentration is to provide students with insight and expertise in the field of urban education. Classroom and field experiences offer the student the opportunity to gain expertise in the skills which are increasingly necessary in order to function effectively as an educator in the urban school setting.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for the degree of Master of Education.

Admission to the concentration is gained through approval of the application for Master of Education candidacy by the Concentration Coordinator and the Dean of the Division of Graduate Education.

Program of Study for the Concentration

Educational Foundations Courses (9 credits)

Research in Education (3 credits)
Advanced Philosophical Foundations of Education (3 credits)
Advanced Psychological Foundations of Education (3 credits)

Urban Education Concentration Courses (15 credits)

Required of all students:

Urban Education II (3 credits)
Social and Cultural Foundations of Urban Education (3 credits)

The student will select, with the approval of his/her guidance committee, three (3) of the following courses:

Teaching Language and Reading in the Inner City Schools (3 credits)
The City and Its People (3 credits)
Education and Race Relations (3 credits)
Integrating Ethnic Studies into the Classroom (3 credits)

Elective Courses (9 credits)

The student will select, with the approval of his/her guidance committee, three (3) of the following courses:

E.S.L. Methodology (3 credits)
Special Problems in Urban Education (3 credits)
The Community School Concept (3 credits)
Implementation of an Individualized Plan for Children with Special Needs (3 credits)
Analysis and Interpretation of Children's Behavior and Learning Environment (3 credits)
Developmental Patterns of Children with Special Needs (3 credits)

Depending upon the matriculant's background, other courses may be substituted as electives with the approval of the guidance committee.

Comprehensive Examination

Each matriculant is required to pass an oral and/or written comprehensive examination in the Urban Education concentration. The format of the examination will be determined by the student and his/her comprehensive committee.

NOTE: It is possible to earn a Master of Education degree with a concentration in Urban Education and an Urban Education Specialist Certificate simultaneously. The requirements overlap. The total credit requirement is thirty-three (33). The Urban Education Specialist Certificate is issued by Worcester State College. The requirement necessary to obtain this certificate is in keeping with the current research which has been carried out by CUTE (Center for Urban Teacher Education).

Individuals holding a master's degree may plan a schedule of courses leading to the Urban Education Specialists Certificate. A maximum of six (6) graduate credits previously taken may be utilized for this purpose.

Master of Arts/Master of Science Degree in Biology

The master of Arts/Master of Science degree program in Biology is designed to broaden the matriculant's understanding of the biological sciences and to prepare him/her for professional careers and doctoral study.

Prerequisite(s) for Admission to the Program

In order to be admitted to the program a candidate must meet the general admission requirements for the degree of Master of Arts/Master of Science.

The program is open to graduates of accredited institutions of higher education who have been awarded a baccalaureate degree and who possess a substantial background at the undergraduate level equivalent to that required of all biological science majors at Worcester State College.

Graduate study in Biology at Worcester State College assumes sound undergraduate training and pronounced academic capability.

The applicant should have achieved a minimum grade point average of 2.75 in all undergraduate work and an average of 3.00 in all course work within his/her major taken at the junior and senior level.

The Graduate Admission Committee of the Department of Biology shall review all applications and make appropriate recommendations to the Dean of the Division of Graduate Education.

Applicants who fail to meet the qualifications stipulated above may petition the departmental Graduate Admission Committee and the Dean for admission to the program on a provisional basis. The provisional status shall be removed upon satisfactory completion of twelve (12) credits in graduate level courses which have been approved by the candidate's guidance committee.

Program of Study for the Degree

The quantitative requirement for the degree is thirty-three (33) credits in approved schedule of courses within the degree program. All work for the degree must be completed within a period of six (6) years.

At least fifty percent (50%) of the course credits must be taken in courses which are exclusively at the upper graduate level (9-000 series courses). At the 8-000 level, only courses num-

bered BI8-200 and above are applicable to the M.A./M.S. program.

Of the thirty-three (33) credits required for the degree, twenty-seven (27) must be earned as a matriculated graduate student at Worcester State College. A maximum of six (6) credits are transferable from another accredited institution of higher education into the program.

Individuals engaged in full-time employment may take no more than two (2) courses per semester toward fulfillment of the degree requirements without the approval of the student's guidance committee and the Dean of the Division of Graduate Education.

Students who accumulate more than six (6) credits of C grade or below must withdraw from the program.

Master of Arts Degree Requirements

Required of all students:

A graduate seminar in Biology (2 credits)
Elective graduate courses as approved by the candidate's guidance committee (minimum of 25 credits)
Thesis Research (6 credits)

Original research is undertaken by the candidate in the field of biology. Students are required to adhere to the form specified for the thesis by the Biology Department.

The results of the thesis shall be defended by the candidate in an oral examination conducted by the faculty of the Biology Department. During the semester in which the candidate anticipates receiving the degree, the following timetable for thesis completion and defense shall apply:

1. A minimum of five (5) weeks prior to graduation, the defense of the thesis must be held;

2. A minimum of one (1) week prior to commencement, the defended and approved copies of the thesis must be submitted to the Division of Graduate Education.

Reading competency in a language other than the candidate's native tongue *or* computer science *or* statistics proficiency as determined by the student's guidance committee.

The Graduate Study Foreign Language Test (ETS) is the testing tool for foreign language competency for the Master of Arts degree. The minimum acceptable passing score for fulfillment of the language competency is 450.

Students electing to satisfy computer science or statistics proficiency must meet the requirements established by the Biology Department in conjunction with the Computer Science Department or the Mathematics Department. Proficiency will be determined by the candidate's performance on a competency examination certified by his/her guidance committee or by the completion of a program of study (approved by the guidance committee) with a minimum grade of B.

Comprehensive Examination

This examination will involve the subject matter of general biology and that of the candidate's field of specialization. A minimum of twenty-four (24) credits in approved graduate courses must be satisfactorily completed prior to the filing by the candidate of a request for scheduling of the comprehensive examination. The nature of the comprehensive examination, whether it be written and/or oral, will be determined by the candidate and his/her comprehensive committee.

A candidate who fails the examination shall be granted one (1) additional opportunity to satisfactorily fulfill this requirement.

The candidate shall be eligible to receive the degree at commencement upon endorsement by the departmental faculty and the Dean of the Division of Graduate Education.

Master of Science Degree Requirements

Required of all students:

A graduate seminar in Biology (2 credits)
Elective graduate courses as approved by the candidate's guidance committee (minimum of 25 credits)
A satisfactory paper based on intensive study and review of the scientific literature on an approved topic practicum with or without supplementary field or laboratory work. The final copy of the paper, following approval by the Chairperson of the candidate's guidance committee, will be evaluated by the entire guidance committee (6 credits).

Reading competency in a language other than the candidate's native tongue *or* computer science *or* statistics proficiency as determined by the student's guidance committee.

The Graduate Study Foreign Language Test (ETS) is the testing tool for foreign language competency for the Master of Arts degree. The minimum acceptable passing score for fulfillment of the language competency is 450.

Students electing to satisfy computer science or statistics proficiency must meet the requirements established by the Biology Department in conjunction with the Computer Science Department *or* the Mathematics Department. Proficiency will be determined by the candidate's performance on a competency examination certified by his/her guidance committee or by the completion of a program of study (approved by the guidance committee) with a minimum grade of B.

Comprehensive Examination

This examination will involve the subject matter of general biology and that of the candidate's field of specialization. A minimum of twenty-four (24) credits in approved graduate courses must be satisfactorily completed prior to the filing by the candidate of a request for scheduling of a comprehensive examination. The nature of the comprehensive examination, whether it be written and/or oral, will be determined by the candidate and his/her comprehensive committee. A candidate who fails the examination shall be granted one (1) additional opportunity to satisfactorily fulfill this requirement.

The candidate shall be eligible to receive the degree at commencement upon endorsement by the departmental faculty and the Divison of Graduate Education.

Educational Foundations Courses Required of M.Ed. Candidates

ED9-980 ADVANCED PSYCHOLOGICAL FOUNDATIONS OF EDUCATION. Studies and evaluates the role of those environmental, mental and extra-mental forces which motivate all learners to utilize fully and effectively their capacities, aptitudes, and attitudes. A systematic analysis of the major schools of psychology with special attention focused on the contemporary schools. Attention given to the teachers' role in the learning process and special emphasis on the application of these principles to specific classroom situations. Prerequisite: Educational Psychology or permission of the instructor.

ED9-970 ADVANCED PHILOSOPHICAL FOUNDATIONS OF EDUCATION. Oriented towards the total self of the student in terms of rationalistic pragmatic and existential-humanistic philosophies of education. Emphasis on the deepening, raising, and broadening of one's consciousness about the philosophical phenomena of education in the contexts of teaching and learning, knowledge and experience, and school and society. Students are expected to do an in-depth philosophical study of education, drawing upon the sources of knowledge and experience for self-development. Prerequisite: ED7-280—History and Philosophy of Education. May be waived at discretion of instructor or the instructor and Dean of Graduate Education if student has completed an equivalent course.

ED9-960 RESEARCH IN EDUCATION. Use of appropriate research methods in selection and evaluation of data and assisting the graduate student in the preparation and understanding of a research report. Major areas of emphasis include the nature of and criteria for evaluating research, library, techniques and format of report, and necessary statistical concepts and methods of research. Student is expected to demonstrate his knowledge of these in a term research study. Prerequisite: A bachelor's degree from an accredited college.

Master of Education–Certificate of Advanced Graduate Study with a Concentration in School Psychology

The Master of Education/Certificate of Advanced Graduate Study concentration in School Psychology is a sixty-three (63) credit interdisciplinary program designed to provide students with the competencies necessary to function as school psychologists in the Commonwealth of Massachusetts.

Students completing the program meet the commonwealth requirements for certification as school psychologists.

Prerequisite(s) for Admission to the Concentration

In order to be admitted to the concentration, a candidate must meet the general admission requirements for matriculation in the program leading to a Certificate of Advanced Graduate Study.

Admission to the concentration is gained through approval of the application for Certificate of Advanced Graduate Study candidacy by the Concentration Coordinator and Dean of the Division of Graduate Education.

Program of Study in the Concentration

Core Required Course (3 credits)

Research in Education (3 credits)

Educational Foundations Courses (12 credits)

A. School Structure, Administration, and Philosophy

Required Course:

Advanced Philosophical Foundations of Education (3 credits)

With the approval of his/her guidance committee, the student may elect the following course:

Issues in School Psychology (3 credits)

B. Curriculum, Teaching Methods, and Remediation

Required Course:

Education of Children with Special Needs (3 credits)

With the approval of his/her guidance committee, the student will elect *at least* one (1) of the following:

Foundations of Reading (3 credits)
Reading in the Elementary School (3 credits)
Reading in the Secondary School (3 credits)

Psychological Foundations Courses (12 credits)

A. Normality

Required Course:

Advanced Psychological Foundations of Education (3 credits)

With the approval of his/her guidance committee, the student will elect one of the following:

Principles of Behavior (3 credits)
Psychology of Learning (3 credits)

B. Exceptionality

Required Course:

Diagnosis and Correction of Reading Difficulties (3 credits)

With the approval of his/her guidance committee, the student may elect to take:

Advanced Abnormal Psychology (3 credits)

Assessment, Prescriptive, and Intervention Strategies (24 credits)

A. Assessment Strategies (9 required credits)

Required Courses:

Individual Intelligence Appraisal—Wechsler (3 credits)
Individual Intelligence Appraisal—Binet (3 credits)
Psychodiagnostic Techniques (3 credits)

With the approval of his/her guidance committee, the student may elect to take one or more of the following:

Analysis and Interpretation of Children's Behavior and Learning Environment (3 credits)
Student Appraisal Procedures (3 credits)
Evaluation of Classroom Learning (3 credits)
Advanced Psychological Testing (3 credits)
The Pre-School Child with Special Needs (3 credits)
Illinois Test of Psycholinguistic Abilities (3 credits)

B. Prescriptive and Intervention Strategies (6 required credits)

Required Courses:

Psycho-Educational Prescriptions (3 credits)
Development and Implementation of an Individualized Educational Plan for Children with Special Needs (3 credits)

With the approval of his/her guidance committee, the student may elect to take one or more of the following:

The Gifted Child (3 credits)
Education of the Slow Learner
Seminar in Intervention Strategies (3 credits)
Psychology of Exceptional Children (3 credits)
Psychology of Subnormal and Unadjusted Children (3 credits)
Classroom Management Techniques (3 credits)
Behavior Modification in the School (3 credits)
Consulting and Interpersonal Skills for the Generic Special Teacher (3 credits)

Supervised Field Experience (12 credits)

Required Courses:

Practicum in School Psychology I (3 credits)
Practicum in School Psychology II (3 credits)

Certificate of Advanced Graduate Study

CAGS IN COUNSELOR EDUCATION

Admissions Policy and Procedure

Candidates for the CAGS must complete the formal application process as directed by the Graduate Office of Worcester State College.

Eligibility—Candidates for the CAGS Certificate must have a Masters Degree with a major in Counseling. Candidates without a Masters Degree in Counseling must establish that they have Substantial Preparation in Counseling. The Counselor Education Program defines Substantial Preparation as a minimum of six (6) Graduate level courses in the area of Counseling. Candidates will be required to submit official transcripts and official course descriptions in order that the Program may properly evaluate their formal preparation.

Courses taken for the CAGS may not repeat courses previously accomplished by the student either in his undergraduate or Masters Degree Program.

Candidates who meet the minimum qualifications and have taken graduate level courses (9 Series only), beyond the Masters at Worcester State College may submit two of these (6 hours) for evaluation for credit toward the CAGS. Individuals interested in transferring more than six (6) hours of post-masters work toward the CAGS must present their appeal to the Graduate Committee.

—9 Series Courses taken at Worcester State must relate to the CAGS Program in order to be eligible for credit toward the Certificate.

—All candidates must meet the requirement of no more than six years elapsing between the date of the first course credited toward the CAGS and the completion of all requirements for this Certificate.

All candidates for admissions to the CAGS Program must meet with and be assigned an advisor for their program before being granted final acceptance into the CAGS program.

General Information

Candidates for the Certificate of Advanced Graduate Study (CAGS) must complete the formal application process with the Graduate Office in order to be fully matriculated in either of the programs.

Only "9 Series" courses may be used for credit by candidates for the CAGS.*

All students for the CAGS Program must meet with their advisor in order to plan their programs. This must be done before candidates have completed more than two (2) courses which they wish to apply to the degree.

Candidates for the CAGS Certificate must complete a written examination based on Areas I, II, III, and V, as well as an oral examination based on Area IV (above).

Students not formally matriculated in the Counselor Education Program are eligible and encouraged to consider any of the courses described in the program.

* For course offerings and descriptions see section under M.Ed. with concentration in Counselor Education.

Program of Study

Candidates must complete 30 credit hours in courses from the following five areas:

Educational Foundations (3 sem. hrs.)

Courses in the history, philosophy, and psychology of the educational process and/or curriculum and principles of administration.

Psychological and Social Foundation (3 sem. hrs.)

Courses in the psychodynamics of human behavior and/or the interactive influence of the personality and the societies within which it develops.

Professional Skills (12 sem. hrs.)

Courses in specific techniques related to competencies important to counseling. These courses should be spread over the following:

Counseling Skills—Courses in the techniques of counseling and/or psychotherapy.

Recommended Courses: Counseling and Psychotherapy Group Counseling.

Appraisal Skills—Courses in the theory and techniques involved in measurement and evaluation.

Recommended Courses: Individualized Intelligence, Appraisal—Binet; Individualized Intelligence, Appraisal—Wechsler; Advanced Psychological Testing.

Research Skills—Courses in research design and methodology.

Recommended Courses: Statistics in Behavioral Science, Research Design.

Career Education Skills—Courses in theory and techniques.

Recommended Courses: Occupational & Educational Information, Psychology of Vocational Adjustment, Current Issues and Procedures in Career Education.

Administration—Courses in the theory and practice in pupil personnel services.

Recommended Courses: Pupil Personnel Services, Organization and Administration of Guidance Services, Student Personnel Services in Higher Education.

Supervised Professional Experience (6 sem. hrs.)

An internship experience utilizing counseling and appraisal skills under supervision.

NOTE: Candidates who have completed one year of paid full time experience as a counselor are exempt from the Internship requirement. However, in lieu of the Internship they are required to complete a 3 credit Seminar in "Current Issues in Counseling and Guidance."

Elective Area (6-9 credits dependent upon past experience)

Students may elect courses in Areas I, II, or III with the advice and consent of their advisor.

Comprehensive Examination

All candidates for the Certificate of Advanced Graduate Study must successfully complete both a written and oral examination. The written examination will be based on Areas I, II, III, and V. The oral examination will be based on Area IV.

CAGS IN EDUCATIONAL ADMINISTRATION AND LEADERSHIP

Admissions—Policies & Procedures

All candidates must have a Masters Degree in Educational Administration or have completed eighteen (18) semester hours of graduate work in Educational Administration. Candidates for the CAGS must complete the formal application process as directed by the Graduate Office of Worcester State College. Courses taken for the CAGS may not repeat courses previously accomplished by the student either in his undergraduate or Masters Degree Program.

Candidates who meet the minimum qualifications and have taken graduate level courses (9 series only) beyond the Masters at Worcester State College may submit two or these (6 hours) for evaluation for credit toward the CAGS. Individuals interested in transferring more than six (6) hours of post-masters work toward the CAGS must present their appeal to the Graduate Committee. 9 Series Courses taken at Worcester State must relate in the CAGS Program in order to be eligible for credit toward the Certificate. All candidates must meet the requirement of no more than six years elapsing between the date of the first course credited toward the CAGS and the completion of all requirements for this Certificate. All candidates for Admissions to the CAGS Program must meet with and be assigned an Advisor for their program before being granted final acceptance into the CAGS Program.

Program of Study

Candidates must complete a minimum of 30 credit hours in courses from the following five areas.

Educational Foundations

Courses in the history, philosophy, and psychology of the educational process and/or curriculum and principles of administration.

Research

Courses in research design and methodology and statistics.

Educational Leadership Concentration

Educational leadership courses in the student's area of concentration, e.g. Elementary Education, Secondary Education, General Educational Administration and Community Education.

Cognate

Advanced courses in areas other than education.

Action Research Project

Each student is required to complete a six (6) credit action research project according to the following guidelines.

Procedures for initiating an Action Research Project.

The candidates should choose an area of proposed research which will culminate in the completion of the Action Research Project. This choice can be made with the assistance of the candidate's advisor.

The candidate should request a member from the Educational Administration Graduate School Faculty to act as Chairman of his Action Research Committee. This individual may be his advisor or some other faculty member who may be more interested in his Project.

The candidate will select one additional faculty member from the Graduate School faculty to serve on this Committee. The Dean of the Institute for Community Service will assign a third member to the Candidate's Action Research Committee. The candidate can expect to have a minimum of two meetings with the Committee. The first meeting will be concerned with the acceptance of the proposal, and the second with the final presentation and oral defense of the Project.

Guideline for the Action Research Proposal

Purpose of the Study

In four or five sentences a succinct statement concerning the purpose of the study ought to be developed.

The Problem

Historical Background—A brief review of the background associated with the problem both on the local level and the national level when such background will help the reader to understand the full scope of the problem. Pertinent related literature ought to be included here.

Need for the Study—A statement indicating why this study is needed, that is, who will benefit and in what ways.

Background Assumptions—A statement indicating any underlying themes, theories or assumptions associated with the problem and which the writer accepts without proving.

Hypotheses

The basic questions to be raised by the writer which the study will attempt to answer.

If statistical analysis is to be used then the hypotheses ought to be developed so that they lend themselves to such analysis.

Methodology

A description of the population or sample involved, or the ways in which the data is to be collected ought to be developed. The procedures which the writer intends to follow should be clearly defined. If statistical treatment is to be used then a brief description of the treatment should also be included.

Definition of Terms

When using particular terms which are vital to understanding the Action Research Proposal, such terms ought to be defined.

Limitations and Assumptions

A list of the limitations which would tend to inhibit the writer should be developed. Included in the list should be any assumptions the writer is making about the participants in the study.

For course offerings and descriptions see section under M.Ed. with concentration in Leadership and Educational Administration.

CAGS IN PROFESSIONAL EDUCATION WITH A CONCENTRATION IN LANGUAGE ARTS/READING

Rationale

There has been a continuing demand for a structured program beyond the Master's Degree for teachers and administrators who feel the need for further study in the fields of reading, language and literature.

Admissions—Policies and Procedure

All candidates must have a Master's Degree in Reading or Language Arts. For those candidates who hold a Master's Degree in other areas, a minimum of 18 semester hours in either lan-

guage arts or reading is required. Candidates will be required to submit official transcripts and official course descriptions in order for the administrators of the Graduate Education Program and the Coordinators of the Language Arts/Reading CAGS to evaluate their eligibility status.

Candidates for the CAGS must complete the formal application process as directed by the Graduate Education Office at Worcester State College. Courses previously applied to the Master's or Undergraduate degree may not be credited to this program. All credits toward the CAGS degree must be taken at Worcester State College. No credits may be transferred into the program from another institution of higher education. Six (6) semester hours in the 9-000 series which have been taken at Worcester State College prior to admittance to the program and which are deemed applicable, may be transferred into the CAGS program. Any credits beyond these six (6) which a student would like to transfer into the CAGS program must be approved by the Department Chairperson of the program and then presented to the Graduate Committee for approval.

All work for the degree must be completed within a period of six (6) years. All candidates for admission to the CAGS program must be interviewed before being admitted into the program. Each semester every candidate must meet with his/her advisor to have his/her semester program approved.

Program of Study for the CAGS in Language Arts/Reading

Candidates must complete a minimum of 30 credits in the 9-000 series at Worcester State College, adhering to the following guidelines:

Required Courses

A. Seminar in Language Arts/Reading (first course in sequence)—3 credits

B. Courses in the three Major Areas (a minimum of one in each area)—9 credits

1. **Reading and Language Arts**
   1. Identification and Prescription for Learning Problems in Reading and Language Arts
   2. Review and Research in Language Arts and Reading
   3. Phonetics in the Language Arts and Reading Program
   4. Linguistics in the Language Arts and Reading Program
2. **Language**
   1. The Study of the Development of Language
   2. Dysfunction in Linguistic Processes
   3. The Study of Composition in the Language Arts Curriculum
   4. The Psychology of Language
   5. Linguistic Approaches to Language
3. **Literature**
   1. Advanced Seminar in Children's Literature
   2. Literature for Minority Children
   3. Psychological and Symbolic Findings in Children's Literature
   4. Books and Related Materials for Adolescents
   5. Bibliotherapeutic Implications in Children's Literature

(NOTE: For courses other than those listed in "B" above, permission from a student's advisor is required).

C. Advanced Seminar in the Language Arts/Reading (upon completion of the 12 credits in A and B above)—3 credits

D. The following options are available for students to complete the required courses for the CAGS program.

The options are:

(SIX CREDITS FOR EACH OPTION)

OPTION NO. 1

Independent Research

In doing the Independent Research Project the student must adhere to:

a. Statement of Problem
b. Justification for the Study
c. Review of Related Research
d. Selection of Pupils
e. Diagnosis of Needs
f. Instructional Program
g. Evaluation
h. Summary and Recommendations
i. Bibliography and Appendices

OPTION NO. 2

Supervised Practicum

The candidate may submit a proposal involving an innovative instructional program in Reading and/or Language Arts with normal children or children with learning problems. The proposal should include:

a. Statement of Problem
b. Justification
c. Review of Related Research
d. Selection of Pupils
e. Diagnosis of Needs
f. Instructional Program
g. Evaluation
h. Summary and Recommendations
i. Bibliography and Appendices

OPTION NO. 3

In-Service Projects

An in-service project in the field of Language Arts/Reading will be considered by the Committee in the light of its educational worth. The following are some suggested projects:

a. The original design and testing of instructional materials using multimedia
b. The development of a modern curriculum in the fields of Reading and/or Language Arts
c. The development of in-service workshop to help teachers improve their teaching of the Language Arts/Reading
d. The development of in-service workshops to help teachers refine their appraisal skills in the Language Arts/Reading

Guidelines for Independent Research/ Supervised Practicum/In-Service Projects

a. The candidate should choose the area which will culminate in a research project or practicum in which learning modalities, teaching techniques, and the utilization of media are involved in the Language Arts/Reading/Literature areas
b. A member of the graduate faculty in Education must act as the chairperson of the student's project committee. This chairperson may or may not be the candidate's advisor.
c. The candidate and the chairperson of his/her project will cooperatively plan the proposal for the project.

E. **Electives** (9 sem. hrs.)

Adult Education, Communication Disorders, Early Childhood Education, English, Language Arts, Learning Disabilities, Literature, Measurement and Evaluation, Media/Library Science, Reading, Special Education, Supervision and/or Administration, Urban Education. Other (see advisor).

Comprehensive Examination

(To be taken on completion of 30 credits.)

All candidates for the Certificate of Advanced Graduate Study must successfully complete both a written and oral examination. The written examination will be based on the two seminars and required courses. The oral examination will be based upon the independent research project, the practicum, or the in-service project.

For further information kindly contact: Dr. Marion J. Jennings, Reading Coordinator, Ext. 295 or Dr. A. Barbara Pilon, Language Coordinator, Ext. 213.

For course offerings and descriptions see section under M.Ed. with concentration in Language Arts/Reading.

Course Descriptions

ADULT EDUCATION
COMMUNITY EDUCATION
URBAN EDUCATION

ED8-003 READING NEEDS OF THE ADULT LEARNER PHASE I. This one credit segment of a three credit-three segment course will encompass learning and teaching the decoding skills with emphasis on instruction for adults. Students will participate in seminars as well as self-directed study through modularized materials. Each section is complete in itself.

ED8-160 READING NEEDS OF THE ADULT LEARNER. Diagnosis and correction of reading difficulties of the adult learner. Prerequisite for Teaching the Illiterate Adult.

ED8-180 WORKSHOP IN ADULT EDUCATION: EVALUATION OF EDUCATION MATERIALS. Participants will evaluate and/or create materials suitable for teaching academic skills including reading, writing, speaking, listening, spelling, grammar and mathematics to adults. Other content areas which will be considered involve the life-coping skills such as personal development, consumer education, and employment training. Materials to be evaluated will come from adult learning centers and they will be examined and rated according to readability level, skill development, level of sophistication, interest level, etc. Some new materials will be introduced and analyzed in the same fashion.

ED8-200 THE COMMUNITY SCHOOL CONCEPT. A basic introduction to the community school and the concept of community education; involves various structures and strategies in bringing the local school constituency into the process of education; the rationale of the necessity of public involvement is included. Prerequisite: Consent of Instructor.

ED8-210 ORGANIZATIONAL PATTERNS OF THE COMMUNITY SCHOOL. National, State and local patterns of organizations within the Community Education movement will be developed. The community school concept will be explored as it relates to the theory of organizations.

ED8-215 CURRICULUM DEVELOPMENT FOR ALTERNATIVE EDUCATION. Participants will engage in the development of alternative programs and strategies based on available community resources.

ED8-216 THE ROLE OF THE FAMILY IN THE COMMUNITY SCHOOL. This course is designed to show the relation of the community education concept to family life. The role of the family unit in the development of educational goals will be explored. The range of life styles and the need for societal pluralism as it relates to the goals of community education will be developed.

ED8-220 COMMUNITY RESOURCES TO MEET CHILDREN'S NEEDS. Primarily for elementary teachers to survey programs and resources available in the community, state, and at national levels; social and family services; health, medical and mental health facilities; consideration of new concepts in health care and juvenile programs.

ED8-250 HISTORY AND PHILOSOPHY OF ADULT EDUCATION. This course is designed to provide all learners with an awareness of adult education as a unique segment and change-agent in the broad field of education. Participants will become familiar with the historic development of the field (adult education) and its sponsoring organizations, institutions and agencies; will understand the special problems which face the adult educator change-agent together with the guiding principles useful in their resolution; and will gain some knowledge of the unique physical, psychological, and social characteristics of the adult learner and their associated implications for the practitioner.

ED8-270 COMMUNITY COMMUNICATION AND ORGANIZATION. Special emphasis will be placed in this course on The Development of Community School Advisory Councils. The role, policy and purpose of these groups will be developed. Other neighborhood communication mechanisms will be explored including various agency involvement.

ED8-275 COMMUNITY POWER FOR ADULTS. An exploration of neighborhood power with an emphasis on issue orientation. This is a "how to do it" course which provides practical experience. Participants will consider the theoretical background of community organization and then develop a plan to act on a neighborhood issue.

ED8-280 THE PRACTICE OF ADULT EDUCATION. Gives the student an overview of Adult Education with major emphasis placed on the scope of the field, legislation pertaining to Adult Education and future developments. Lesser importance will be placed on the history of the movement, methods of teaching adults, and Adult Education in Massachusetts.

ED8-295 SEMINAR IN COMMUNITY EDUCATION. This series of seminars is designed to acquaint the student with the various community education models and philosophies that exist in different areas of the northeast. The series will meet in different New England states as well as New York and New Jersey. The series of five (5) seminars is cosponsored by the Community Education Centers at the University of Connecticut, University of Maine, University of Vermont, Rhode Island College, Montclair State College, Worcester State College. 2 credits. Consent of instructor required for registration.

ED9-200 PROGRAMS FOR THE AGING. This course will help participants examine issues, problems and procedures in designing and implementing programs for older adults. Participants will apply knowledge about older adults to various types of programs and services for older adults. Special emphasis will be given to matching programs and services to the needs of older adults in the community.

ED9-210 THE COMMUNITY SCHOOL: ITS ADMINISTRATION AND SUPERVISION. An understanding of community education administration developed for each student in order to effectively prepare them to operate a community school various patterns of administration and supervision that have been developed in the community schools of the U.S. explored.

ED9-215 TEACHING THE ILLITERATE ADULT. An understanding of the scope of adult illiteracy and the methods and procedures for teaching adult illiterates to read; concern given to developing sensitivity to the adult learner.

ED9-220 COMMUNITY SCHOOL: PROCESSES AND PROBLEMS. Develops a theory of community education and tests the assumptions established as necessary parts of a successful community school. The conceptual framework needed to effectively utilize the benefits of community education as an approach to making our schools more responsive to needs.

ED9-225 WORKSHOP IN ADULT BASIC EDUCATION. Participants in this workshop can select one of two options for three credits. Option #1: Participants will investigate the psychology of the adult learner with a distinguished adult educator. This option explores methods of learning which apply to adults; identifies educational needs and problems of the adult learner in overcoming learning difficulties; considers motivation and other factors affecting learning and counseling procedures. Option #2: Participants will create and evaluate materials suitable for teaching reading, mathematics, spelling, grammar, listening and speaking to adults. They will also prepare print materials including instructional objectives and criterion referenced test items for life or coping skills. Prerequisites: Permission for registration must be obtained from David Alexander at the Adult Education Resource Center. Phone 754-6861, Ext. 384.

ED9-235 URBAN EDUCATION II. Focus on the particular areas of significance to the urban child and teacher; specific emphasis on the identification of developmental levels and problems of inner city children, inquiry strategies for classroom situations, possible role playing and simulation games values clarification, environmental studies, and creative expression.

ED9-245 SOCIAL AND CULTURAL FOUNDATIONS OF URBAN EDUCATION. Required course for majors in urban education; exploration of the social and cultural factors which influence urban youth as well as urban schools; the study of contemporary reforms in Urban Schooling, alternatives to present structures and projections for the future also included.

ED9-255 DIRECTED STUDY IN ADULT EDUCATION. Directed study in Adult Education is intended for graduate students who have a background in the field and who have the opportunity to critically analyze a special problem or personal interest in Adult Education. Requirements for the course include a log of experiences accumulated during the investigation or a research paper related to the problem. Students must obtain permission from the director of Adult Education in order to register. 1-6 credits.

ED9-260 PSYCHOLOGY OF THE ADULT LEARNER. Explores methods of learning which apply to adults. Identifies educational needs and problems of the adult learner in overcoming learning difficulties. Considers motivation and other factors affecting learning and counseling procedures. Assignments commensurate with student's background and progressional goals.

ED9-270 PROGRAM PLANNING FOR ADULTS. A basic course in the process of selecting components for adult programs and setting up the administrative structure to deal with them. There is an emphasis on the methods of finding out what the clients in the program want.

ED9-275 ADMINISTRATION IN ADULT EDUCATION. This course will explore effective strategies for establishing and attaining realistic goals when faced with administrative concerns such as funding, staff, facilities, and equipment. The focus includes the art of "persuading" school administrators, members of school committees, and elected legis-

lators to support the educational needs of adults. Designed for both practitioners and job seekers in this field.

ED9-280 **INTERNSHIP IN ADULT BASIC EDUCATION.** This practicum is guided by the director of the Adult Learning Center in the Worcester Galleria. Participants will assist in diagnosis, prescription and instruction of clients at the center who are learning basic skills or preparing for the high school equivalency exams. Prerequisites: Reading Needs of the Adult Learner and Teaching the Illiterate Adult.

ED9-290 **SPECIAL PROBLEMS IN COMMUNITY EDUCATION.** Devised for graduate students with a background in Community Education. The student will work closely with the instructor in the compilation and development of information concerning a particular problem that is current in the field today. Consent of the instructor is necessary for registration in this course.

ED9-296 **SPECIAL PROBLEMS IN URBAN EDUCATION.** Seminar for experienced teachers wishing to examine specific problems in urban education, participate in curriculum development for urban schools, or investigate teaching methodology in selected areas; course content will be individualized to meet interests of participants.

ED9-715 **EDUCATION & RACE RELATIONS.** This course is designed to provide a background of understanding of the role of the school in the development of interracial understanding; it will include a study of: race, history of an idea in America, the culture, contemporary problems, responsibility of educators in a pluralistic society. Course requirements will be adapted to meet the needs and interests of members of the class.

AUDIOVISUAL MEDIA (see MEDIA)

BIOLOGY DEPARTMENT

BI8-100 **HUMAN ANATOMY AND PHYSIOLOGY, I.** Considers the anatomy and physiology of the human body under normal circumstances the organization, integration and dynamics of the following areas and systems are stressed; pre-tissue biology, histology, skeletal muscular cardiovascular, and nervous. Lectures and text augmented dissection of selected organs and specimens in the laboratory. Prerequisite: General Biology II, General Zoology or Consent of Instructor. 4 sem. hrs.

BI8-001 **PHYSIOLOGY OF EXERCISE AND PHYSICAL FITNESS.** The changes taking place within the body which allow, and those which result from, muscular exercise. The influence of nutrition, drugs, heart disease, heredity, fatigue and physical fitness will be discussed.

BI8-002 **MAGIC, MYTH AND MEDICINE.** A consideration of the major areas of superstition particularly fertility and birth, household cures, faith healing, health spas and death.

BI8-003 **RHYTHMIC PHENOMENA IN PLANTS AND ANIMALS.** This course considers the study of cyclic behavior in plants and animals and the role of environmental stimuli in the entrainment of rhythms. Fundamental properties of rhythms, significance of cyclic behavior, endogenous vs. exogenous control, and circadian periodicities will be included. Selected examples of biological clocks which have been demonstrated in plants and animals will be explored.

BI8-004 **SEMINAR IN REPRODUCTIVE PHYSIOLOGY.** This course will involve the study of specific journal articles in the field of reproduction . . . with a view to understanding the actual research. Each student will be orally reporting on these journals. This course necessarily would be restricted to those persons having completed a course in Reproductive Physiology.

BI8-110 **INTRODUCTION TO BIOLOGICAL TECHNIQUES.** Discussions of the goals, methods and limitations of science, a treatment of research in biology; the literature of biology; measurement and techniques; instrumentation, data organization experimental design and presentation of results; laboratory supplement lectures.

BI8-115 **PRE TISSUE BIOLOGY.** Consider the phenomena of life primarily at molecular-cellular (pre-tissue) level. Eclectic topics reflect concerned response to broad variety of bio-educational backgrounds of students, directed towards expanding their respective needs and interests. Basic questions concerning nature, dynamics, and continuity of life (including special areas such as viruses, cancer, heredity, molecular biology, etc.) posed and, by lectures and/or demonstrations, answers and modern interpretations questions will be offered. Appropriate term paper and/or tutorial project required of all post-baccalaureate matriculants.

BI8-120 **ANIMAL WORLD AND ITS' EVOLUTION.** Include survey of the animal kingdom, its' evolution, and certain taxonomic considerations. Directed towards expanding background of those with a minimum of formal training in biological sciences. Supplemented with audiovisual materials, demonstrations, films, slides, and examination of selected living and/or preserved specimens.

BI8-125 **PLANT WORLD AND ITS EVOLUTION.** Understanding and appreciation of the plant world—especially in New England area: initial class meetings devoted to techniques of tree identification via printed diagnostic keys and tree walks; subsequent meetings devoted to consideration of several groups of plants—algae, fungi, mosses, ferns conifers, and flowering plants; acquaintance with select list of New England flowers through variety of recommended methods.

BI8-130 **MAN'S ENVIRONMENT: THE OCEANS.** Elementary presentation of oceanology with consideration given to environmental problems faced by man and his technology as he studies ocean environment. Topics include geography of the sea, physical and chemical properties, ocean environment, dynamic integration of land, sea, and air, and contaminated ocean.

BI8-135 **INTERPRETATION OF SCIENTIFIC AND MEDICAL CLAIMS.** This course presents the techniques used to discriminate between proven and unproven claims concerning new products, diets, treatments and discoveries which are made in today's news media. Includes identifying acceptable sources of information, application of simple logic & scientific proof. An introduction will be made to the reading of key scientific & medical indexes & journals and to the recognition of adequate or inadequate evidence for making a clear conclusion. While specific claims will be examined in depth, the framework will be presented which will allow one to examine any future claims.

BI8-140 **GENERAL ZOOLOGY.** Fundamental concepts of animal biology, including anatomy and physiology, development, genetics, taxonomy, ecology, and evolution.

BI8-145 **TOXICOLOGY AND DRUGS.** This course deals with the subject of toxicology as a basic science. It describes the principles involved in the study of the harmful actions of chemical agents are considered only in regard to their use as examples. Intended to give the properly prepared student an understanding & appreciation of the phenomena of the chemical-biological interactions.

BI8-150 **HERPETOLOGY.** Consider structural and functional characteristics of amphibians and reptiles, 2) their origin and evolution, 3) their ecological relationships including temperature and moisture, 4) their reproductive adaptations and isolation, 5) their population dynamics and distribution, and 6) their systematics and behavior. The Natural history of endemic herptiles stressed. Students required to 1) learn to identify native-Massachusetts and New England-herptiles, 2) participate in 2 or 3 scheduled field trips. Prerequisites: Three courses in advanced biology or consent of Instructor. 3 Semester hours.

BI8-160 **MICROBIOLOGY FOR THE NON-BIOLOGY MAJOR.** An introductory course in microbiology for the student who is

not a Biology major. The course first considers the morphology and the physiology of the microorganisms, then focuses on the host factors, infection and immunity. The destruction and inhibition of microorganisms are studied. Selected bacterial pathogens are discussed. A unit on the viruses is included. Microbiological techniques and appropriate experiments are stressed in the laboratory.

BI8-205 **SOCIAL GENETICS.** Population characteristics rather than the individual are emphasized. Population and demography aspects of general human genetics and behavior are considered and discussed. Minimum of statistical analysis. No laboratory.

BI8-210 **ADVANCED HUMAN GENETICS.** Concentration on the most frequent genetic abnormalities. An awareness and understanding of the nature of "genetics diseases" is stressed; their manifestations are made patent especially as they affect the concerns and responsibilities of the educator and the medical professions. Selected and appropriate laboratory exercised and demonstrations will be incorporated into the lecture-discussion sessions.

BI8-215 **HISTOLOGY.** Lectures will emphasize the structure and function of all the major tissues and organs in the body. Laboratories will involve learning Prerequisite: One course in Zoology or equivalent. Four credits.

BI8-220 **ENDOCRINOLOGY.** Emphasis is on the role of endocrine glands in the normal integration of animals; mechanism of hormone action, functions, and their inter-relationships. Laboratory exercises and demonstrations. Prerequisite: Courses in Chemistry and Physiology. Four credits.

BI8-225 **MAMMALIAN PHYSIOLOGY.** Introduces cell and membrane physiology explores depth neuromuscular, circulatory, respiratory, and metabolic systems in mammals and man. Laboratories cover techniques for measuring physiological phenomena such as nervemuscle preparations, respiratory patterns, EKG, oxygen consumption. Experimental approach encouraged. Prerequisite: one course in zoology. 4 credits.

BI8-230 **ENVIRONMENTAL PHYSIOLOGY.** Several systems of the mammalian body with special reference to man, involved in response to extreme natural and artificial environments; includes study of physiological response of these systems to specific stresses, mechanisms of adaptation, pathology and deterioration resulting when environmental limits are reached and where homeostatic mechanisms cannot be maintained. Specific stresses studied include heat, cold, altitude, hyperbaris, space, poisons in environment, exercise, thirst, starvation, sleep deprivation, emotions and air borne stressors. Prerequisites: Mammalian Physiology, Comparative Animal Physiology, Human Anatomy and Physiology or consent of Instructor.

BI8-240 **PARASITOLOGY.** Survey better known animal parasites. Morphology, taxonomy, life cycles, ecological relationships and control methods discussed. Laboratory consists of morphology, and life history representation of each group. Techniques of collecting, preparation and identification of parasites studied.

BI8-245 **PLANT PATHOLOGY.** Nature, symptomology, causal agents of plant diseases. The physiology of diseased plants and the nature of host-parasite interactions will be explored. Fundamentals of infection and disease development, disease susceptibility or resistance of host will be studied. Prerequisite: One course in Botany. Four credits.

BI8-250 **ANIMAL ECOLOGY.** Responses of animal populations and communities to environmental factors. The effects of physical and biotic factors on the distribution and abundance of animals together with interactions, behavior and adaptations. The flow of energy through animal communities. The concepts of nich, speciation, succession, classification and evolution are considered. Prerequisite: A course in General Zoology.

BI8-255 **FRESH WATER ECOLOGY.** Overview of physical, chemical, and biological factors present in standing and running waters, emphasis on their effect on ecology and productivity of living systems; identification of living fresh-water organisms and physical and chemical properties of their environment.

BI8-260 **WILDLIFE INVESTIGATIONAL TECHNIQUES.** Procedures for collection and analysis of data in wildlife surveys, management studies, and research investigations. Vertebrate game species; instrumentation, record keeping, habitat evaluation, population estimation, population analysis, field preservation, postmortems, mortality measurement, food habits analysis, project planning, use of the literature, and preparation of research reports are emphasized. Prerequisites: Courses in Botany, zoology, and ecology. Four credits.

BI8-270 **PLANT PHYSIOLOGY.** The major areas of plant physiology emphasizing fundamental principles underlying plant processes and plant responses to environmental factors; the physiological processes involved in growth, development, nutrition, and metabolism of plants. 4 credits.

BI8-285 **ENTOMOLOGY.** Structure, Classification, anatomy and physiology and life histories of insects. Emphasis on characteristics used in Identifying all orders and many families of insects. Each student makes insect collection, properly mounts and identifies specimens. Prerequisite: General Zoology. Four credits.

BI8-400 **MICROBIOLOGY.** This introductory course will study the microorganisms in general and the bacteria specifically. It will stress the morphological, physiological, and epidemiological aspects of the microorganisms. Units on immunity and infection will be included. The laboratory will focus on the understanding of fundamental techniques in morphology, physiology of the microorganisms. There will be applied laboratory exercises as well.

BI8-450 **PRINCIPLES OF IMMUNOLOGY.** A presentation of the important principles of immunology and an introduction to cell defense mechanisms in health and disease; the reactions of immune substances, most notably antibodies. This course is presented at the level of biology seniors/ beginning graduate students.

BI9-150 **PRINCIPLES OF ADVANCED BIOLOGY I.**

BI9-155 **PRINCIPLES OF ADVANCED BIOLOGY II.** Required of all MA/MS in Biology matriculants during initial semester. Staff-taught (Biology Graduate Faculty). Participants examine major generalizations in life sciences. Lecture/ discussion sequences introduce certain methodologies that allow students to engage in a scientific endeavor. Aspires to intra-biological and inter-disciplinary synthesis. Presumes student review, and anticipates both vertical and horizontal competency in discipline by student.

BI9-210 **PRINCIPLES OF TAXONOMY AND EVOLUTION.** Considers the principles of taxonomy and organic evolution in the broadest sense. Emphasis will be both intra- and inter-disciplinary. Basic topics include international codes of biological nomenclature, history of taxonomy, methodology, organic evolution (Both facts and mechanisms), contemporary taxonomic and evolutionary issues, literary review, etc. Taxonomic methods and evolutionary dynamics in nonbiological areas may be explored.

BI9-215 **PRINCIPLES OF CYTOLOGY.** Fundamentals of cellular structure and function, with special emphasis on the nucleus, its chemical and physical make-up; Cytological techniques; laboratory studies of cell organelles; chromosomal structure and behavior; Selected staining procedures and tissue culture methods. Prerequisite: A course in cell biology. Four credits.

BI9-220 **CYTOGENETICS.** Advanced genetic principles, the current knowledge of chromosomal abnormalities and related clinical manifestations discussions of genetic counseling in terms of cytogenetic data. Laboratory procedures will encompass human cytogenetics and animal genetics with applications to clinical situations. Prerequisites: General Genetics and one course in advanced genetics or consent of the instructor.

BI9-225 **IMMUNOCHEMISTRY.** Nature of various immune reactions; nature of the antigen-antibody reaction; qualitative and quantitative clinical applications. Recent contributions of immunology and immunochemistry to problems of genetics, biochemistry and molecular biology; problems of storage and transmission of biologic information in relation to cell growth, differentiation, survival and evolution as applied to immune response and to immunologic specificity. Basic design of immunologic-immunochemical experimentation discussed. Includes laboratory. Prerequisites: Endocrinology, Human Anatomy and physiology, Comparative Animal Physiology *and* consent of instructor.

BI9-230 **REPRODUCTIVE PHYSIOLOGY.** Influence of sex hormones on reproductive system, beginning with embryogenesis and early maturation and extending into areas of fertilization, pregnancy, gestation, parturition and lactation: outside readings required. Prerequisites: Minimum six semester hrs. of Biology. (Physiology or Endocrinology preferred).

BI9-235 **NEUROENDOCRINOLOGY.** The emphasis will be placed on the hypotalamo-hypophysial system in mammals. The influence exerted by the central nervous system will be discussed. Prerequisite: Endocrinology.

BI9-240 **PHYSIOLOGICAL REGULATION.** A review of control mechanisms of the mammalian (human) body which maintain a balance in the rates of reaction of body processes. Mechanisms covered begin at the molecular and cellular levels and include control of heart and circulatory function, respiration and acid-base balance. It deals with stimulus, the mechanisms for change in rate, and inhibitory feed-back mechanisms. Prerequisite: One course in physiology.

BI9-245 **ENERGETICS AND PHYSICAL ACTIVITY.** Covers sources of energy for health, physical activity and weight reduction; chemical pathways of energy utilization; physiological mechanisms in physical activity: Effects of drugs, heart disease, age, heredity, fatigue and physical fitness; the nature of muscle contraction and types of fitness training. A study will be made of champions in several sports. Laboratory includes measuring energy cost of exercise by several techniques, cardiovascular-respiratory, EKG, and EMG changes. Compare tests for physical fitness. Student projects are encouraged. Prerequisite: Two courses in physiology or consent of instructor. Four credits.

BI9-250 **PERSPECTIVES IN HOST-PARASITE RELATIONSHIPS.** Symbiosis is a universal biological phenomenon. Examples from animal parasitology, plant pathology, mycology, bacteriology and virology are used to develop unifying principles of host-parasite relationships. Nutritional, metabolism, genetic and evolutionary mechanisms of the symbionts will be explored. Prerequisites: Parasitology and Plant Pathology.

BI9-255 **PHYSIOLOGICAL ECOLOGY.** In depth study of the physiological adjustments which animals make in response to environmental factors, with emphasis on the physiological basis of animal distribution and evolution. Prerequisites: Courses in physiology and ecology.

BI9-260 **POPULATION ECOLOGY.** An analysis of population growth, density, regulation and energy relationships. Population interactions, organization, and evolution. Prerequisite: Two courses in ecology or consent of instructor.

BI9-265 **ADVANCED BIOLOGY OF LOWER VERTEBRATES.** Life histories, adaptations, ecology, classification, and distribution of fishes, amphibians, and reptiles; emphasis on physiological and behavioral adaptations, their survival value and evolution. Laboratory and extensive field work with local vertebrates. (4 credits).

BI9-270 **INTRODUCTION TO BIOMEDICAL ENGINEERING.** Theory of applying engineering techniques and thinking to biology, particularly to human biology. The principles of biological measurements with a description of some applications on bioengineering. No laboratory Prerequisite: Botany, General Zoology, or consent of the instructor.

BI9-400 **SELECTED TOPICS IN BIOLOGY.** May include survey and careful study of literature, experimentation, observation, and collection of data in field and laboratory. Prerequisite: Consent of instructor 2-6 credits.

BI9-405 **SEMINAR IN BIOLOGY.** Study and discussion of current researches, books, and periodicals in the field of biology. The course also includes reports of research in progress. Required of all graduate degree candidates. Two credits.

BI9-410 **INDEPENDENT STUDIES IN BIOLOGY.** (M.S. candidates in Biology) The course requires a satisfactory paper based on intensive study and review of the scientific literature on a topic approved by the major professor with or without supplementary field or laboratory work (practicum). 1-6 credits.

BI9-415 **RESEARCH THESIS IN BIOLOGY.** (M.A. candidates in Biology) Original research in biology, under the supervision of a member of the graduate faculty and an acceptable thesis. 1-4 credits.

CHEMISTRY

CH8-001 **APPLICATIONS OF COMPUTERS IN CHEMISTRY.** Students will be given instruction in the scientific computer language of BASIC. In addition, several topics in Numerical Analysis will be presented. Students will be assigned computer projects. No previous programming knowledge is required.

CH8-002 **CHEMISTRY AND BIOCHEMISTRY IN DNA.** Topics will include viral, bacterial, and eukaryotic nuclear and mitochondial DNA. Prerequisites: Biochemistry or Organic Chemistry with the consent of the instructor.

CH8-100 **CHEMISTRY OF CARBON COMPOUNDS.** A course in organic chemistry which concerns the major classes of organic compounds; topics include the structure, nomenclature, and stereochemistry of organic compounds; also includes reactions of organic compounds with emphasis placed on the mechanisms of these reactions. Prerequisites: 1 year of General Chemistry.

CH8-125 **CHEMICAL CARCINOGENESIS.** Beginning with an historical survey of the evidence pointing to chemicals as a major source of cancer in humans, this course explores modern theories of the cellular mechanisms of chemical carcinogenesis. Specific topics include metabolic activation of carcinogens, bonding of carcinogens to nucleic acids & other macromolecules, and the interaction of carcinogens with cancer viruses. Prerequisite: Organic Chemistry 1 year of College Biology.

CH8-130 **CHEMICAL PERSPECTIVES IN CANCER.** Beginning with a discussion of the historical evidence that chemicals can act as causative agents in the production of human cancers, this course goes on to a study of modern theories of chemical carcinogens, interaction of carcinogens with proteins and nucleic acids, and theories of cell regulation. Recent advances in chemotherapy will also be discussed. Prerequisites: 1 year of General Chemistry. 1 year of General Biology. 1 year of Organic Chemistry is recommended.

CH8-150 **CHEMISTRY AND OUR ENVIRONMENT.** This course considers the Chemical aspects of our environment. Topics include the needs of man, food, energy, materials, and the problems of air, water, and thermal pollution. No prerequisites: 3 credits.

CH8-155 **CURRENT TRENDS IN CHEMISTRY AND NUTRITION.** Considers the study of the basic concepts of chemistry with contemporary applications. The nutrition portion of the course includes consideration of the nutritional requirements of man, classes of foods, dietary fads, and the use of additives in prepared foods.

CH8-250 **PHYSICAL CHEMISTRY: A LIFE SCIENCE APPROACH.** A non-calculus course in physical chemistry. Topics include: acids, bases, and salts, and their importance in human physiology; thermodynamics and metabolism; physical chemistry of solutions; role of modern instrumen-

tation in biochemical assays. Prerequisites: 1 year of General Chemistry. 1 year of College Algebra.

CH8-350 LABORATORY WORKSHOP IN THE NATURAL SCIENCES. The resources of the Department of Chemistry will be made available to workshop participants who will spend their time in the laboratory developing a store of functional experiments and demonstrations. Materials may be drawn from the physical and biological sciences, earth sciences, and mathematics.

CH8-360 WORKSHOP IN CHEMICAL EVOLUTION. *Chemical evolution* connotes all that occurred before the emergence of life. This interdisciplinary workshop in science will trace a probable course of chemical evolution from the elements, inorganic substances and simple organic molecules found on the primitive Earth to the formation of complex polymeric molecules (nucleic acids, proteins, etc.), and the first protocells. Topics include: historical background, laboratory simulation experiments (synthesis of micromolecules and macromolecules under pre-biotic conditions); sources of energy on the primitive Earth; analysis of geochemical evidence; analysis of the astronomical evidence (including organic matter in meteorites, Jovian chemistry, and the Viking experiments on Mars); the formation of protocells (coacervates); and a concluding discussion of the possibility of life beyond the Earth. Prerequisite: General Chemistry or a major in any of the sciences.

CH8-375 CASE STUDIES IN THE HISTORY OF SCIENCE. The intent of this course is to convey an understanding of the scientific enterprise and scientists. On the one hand, certain significant discoveries, concepts, and theories in contemporary science will be examined in historical perspective. On the other, the scientific work of selected investigators will be considered. The course is intended for the non-scientist as well as those with a more specialized interest in the field.

CH8-410-1 BIOCHEMISTRY LECTURE. (3 credits).

CH8-410-2 BIOCHEMISTRY LABORATORY. (1 credit). Chemistry and metabolism of proteins, nucleic acids, carbohydrates, and lipids; thermodynamics; enzymes; nucleic acids and protein biosynthesis; biological oxidations; and correlations in metabolism. The lecture may be taken without the lab for 3 credits. Prerequisite: 1 year of Organic Chemistry.

CH8-415 MODERN BIOCHEMISTRY. This course deals with the principles and basic concepts of modern biochemistry. Topics include the chemistry and metabolism of proteins, nucleic acids, carbohydrates, and lipids; enzymes; thermodynamics; biological oxidations; and nucleic acids and protein biosyntheses. The concept of enzyme inhibition, the control of metabolism, and the interrelatedness of metabolic pathways are also discussed. Prerequisites: Organic Chemistry I and II.

CH8-420 QUALITATIVE ORGANIC ANALYSIS. Analysis of organic compounds having one or two functional groups, separation of mixtures, and identification of substances by their physical properties and by the preparation of derivatives; two lectures and a four-hour laboratory per week. Prerequisites: CH7-201 CH7-202. 3 credits.

CH8-430 ADVANCED INORGANIC CHEMISTRY. Structure and reactions of the elements and their inorganic compounds; wave mechanics theory of the chemical bond, spectroscopy, inorganic stereochemistry, crystal field theory, coordination chemistry, and atomic structure; three lectures per week. Prerequisites: CH7-301 or consent of instructor. 3 credits.

CH8-440 LABORATORY TECHNIQUES IN MODERN ANALYTICAL CHEMISTRY. This course is intended as an introduction to modern instrumental techniques of chemical analysis for students who have a minimal background in chemistry. Methods to be studied are: atomic absorption spectroscopy, UV spectroscopy, polarography, potentiometry, and gas chromatography. Scheduled experiments include: calcium in urine, lead in tap water, dextromethorphan in cough syrup, antibiotics via UV. Prerequisite: 1 year of General Chemistry.

CH8-450 SPECIAL TOPICS IN PHYSICAL CHEMISTRY. Survey of frontier areas of physical chemistry; informal seminar discussions interspersed with lectures by various members of the chemistry faculty; chemical kinetics, quantum theory of chemical bonding, molecular spectroscopy group theory and symmetry properties of molecules; three lectures per week. Prerequisites: CH7-301 CH7-302. 3 credits.

CH8-460 NATURAL PRODUCTS. An advanced organic chemistry course concerning the structure, synthesis, isolation, and biochemical significance of representative simple and complex heterocyclic and alicyclic compounds such as alkaloids, acerogenins, steroids, and certain antibotics. three lectures per week. Prerequisites: CH7-201 CH7-202. 3 credits.

CH8-470 INSTRUMENTAL ANALYSIS. Advanced level survey of instrumental methods of separation and analysis including spectrophotometry, potentiometry, polarography, and chromatography; lectures deal with theoretical foundations and principles of operation of types of instrumentation studies laboratories are project-oriented and deal with a variety of kinds of problems in chemical analysis; course intended primarily for chemistry majors; two lectures and two three-hour laboratories per week.

CH8-864 ENVIRONMENTAL CHEMISTRY. This course presents the principles of environmental chemistry and chemical ecology. Topics include: biogeochemical cycles; the nature and composition of natural water systems; the nature and composition of the atmosphere; environmental chemistry of soil and agricultural chemicals; chemical interactions between plants and insects. Prerequisites: 1 year of General Chemistry, Organic Chemistry recommended.

CH8-875 SCIENCE, TECHNOLOGY, AND SOCIETY. This course is concerned with the impact of science and technology upon the modern world. Representative problem areas which will be considered are: population, transportation, energy, technological assessment health, space, and government. No prerequisites: 3 credits.

CH8-880 CHEMICAL EVOLUTION. Chemical evolution connotes all that occurred before the emergence of life. This interdisciplinary course in science will trace a probable course of chemical evolution from the elements, inorganic substances, and simple organic molecules found on the primitive Earth to the formation of complex polymeric molecules (nucleic acids, proteins, etc.) and the first protocells. Topics include: historical background; laboratory simulation experiments (synthesis of micromolecules and macromolecules under pre-biotic conditions); sources of energy on the primitive Earth; analysis of the geochemical evidence; analysis of the astronomical evidence (including organic matter in meteorites, Jovian chemistry, and the Viking experiments on Mars); the formation of protocells (coacervates); and a concluding discussion of the possibility of life beyond the Earth. This course is designed for graduate students with a major or concentration in the sciences.

CH9-150 LABORATORY TECHNIQUES IN BIOCHEMISTRY. Graduate-level course designed for graduate students who have had BIOCHEMISTRY (lecture and laboratory). Students will be expected to carry out assigned experiments on topics that include: carbohydrates, nucleic acids, enzymes, etc. Techniques will include spectoscopy, chromotography, biochemical isolations, etc. Lab reports, special project(s) &/or special reports required & assigned by instructor in consultation with the student.

CH9-400 STATISTICAL THERMODYNAMICS. An introduction to the statistical mechanics of systems at equilibrium. Topics to be covered include: kinetic theory, classical phase-space theory, quantum statistics and the applications of statistical thermodynamics to chemical equilibrium and the prediction of reaction rates. Prerequisite: Physical Chemistry.

CH9-421 BIOCHEMISTRY OF NUCLEIC ACIDS. This course concerns the structure and function of DNA and RNA. Topics include bacterial, viral and eukaryotic nucleic acids. Prerequisite: CH8-410. 3 credits.

CH9-422 STRUCTURE AND FUNCTION OF PROTEINS. This course concerns the chemistry and biochemistry of proteins. Topics include the classification, isolation, and amino acid sequencing of proteins. Particular emphasis will be given to enzymes and the kinetics of enzyme-catalyzed reactions.

CH9-423 LABORATORY TECHNIQUES IN BIOCHEMISTRY. This is a laboratory course. Topics include the isolation and characterization of biochemical compounds with emphasis on nucleic acids and proteins including enzymes. Prerequisite: CH8-410. 3 credits.

CH9-450 QUANTUM CHEMISTRY I. An introduction to the quantum theory of systems which do not vary with time. Topics to be covered include: introduction to wave equations and their application to particles, quantum mechanical formalism, the solution of the Schrodinger Equation for the hydrogen atom, angular momentum operators, the symmetric top problem, the matrix approach to quantum mechanics, the asymmetric top problem, and perturbation theory. Prerequisite: Physical Chemistry.

CH9-451 STATISTICAL THERMODYNAMICS. An introduction to the statistical mechanics of systems at equilibrium. Topics to be covered include: Kinetic theory, classical phase-space theory, quantum statistics and the applications of statistical thermodynamics to chemical equilibrium and the prediction of reaction rates. Prerequisite: Physical Chemistry. 3 credits.

CH9-453 QUANTUM CHEMISTRY I. An introduction to the quantum theory of systems which do not vary with time. Topics to be covered include: introduction to wave equations and their application to particles, quantum mechanical formalism, the solution of the Schrodinger equation for the hydogen atom, angular momentum operators, the symmetric top problem, the matrix approach to quantum mechanics, the asymmetric top problem, and perturbation theory. Prerequisite: Physical Chemistry.

CH9-455 QUANTUM CHEMISTRY II. An introduction to the quantum theory of systems which vary in time. Topics to be covered include: time-dependent perturbation theory and its application to problems involving the interaction of radiation with matter, collision theory, and its application to chemical reactions in gas phase. Prerequisite: Quantum Chemistry I.

CH9-500 SPECIAL PROBLEMS IN CHEMISTRY. A laboratory or library research project in consultation with a faculty member.

CH9-900 SPECIAL PROBLEMS IN CHEMISTRY. A laboratory or library research project in consultation with a faculty member. A final written report upon completion of the project is required.

CH9-910 DIRECTED STUDY IN CHEMISTRY. This course is designed for the graduate student who wishes to undertake a program of individualized directed study in chemistry, which may include laboratory work, on a selected topic mutually agreeable to the student and the instructor. This course may be taken for credit for more than one semester. 1-4 credits. Permission of department and consent of instructor required.

CH9-952 QUANTUM CHEMISTRY I. An introduction to the quantum theory of systems which do not vary with time. Topics to be covered include: introduction to wave equations and their application to particles, quantum mechanical formalism, the solution of the Schrodinger equation for the hydrogen atom, angular momentum operators, the symmetric top problem, the matrix approach to quantum mechanics, the asymmetric top problem, and perturbation theory. Prerequisite: Physical Chemistry. 3 credits.

CH9-963 INTERNSHIP IN CHEMISTRY. A laboratory or library research project done at an institution other than Worcester State College. The student selects a non-WSC sponsor to supervise his project. A W.S.C. faculty member must, however, serve as liason. Thus, an option is provided for those students who through their employer and/or other contacts have access to facilities for research at an insitution other than Worcester State College. A final written report upon completion of the project is required. 3 credits.

COMPUTER SCIENCE

CS8-150 WORKSHOP IN COMPUTER SCIENCE. An introductory course in the Basic language. The intent of the workshop is to present to those having little or no knowledge of the computer, the power of the computer in solving problems from various fields. Students will be introduced to the computer—both hardware and software and will, through the use of a programmed text, be taught Basic Practical use of the computer will be stressed.

CS8-175 COMPUTER PRINCIPLES. A course in the functional aspects of digital computers and in BASIC programming. The course aims at familiarization with various elements of computer technology as storage devices, input, output, number representation covering binary and hexidicimal notation, the function of machine language, and utilization of peripheral equipment. A thorough understanding and application of programming in BASIC will be developed.

CS8-200 COMPUTER PROGRAMMING WITH FORTRAN IV. Considers the uses of computers for mathematical and scientific problem-solving; Topics include input-out statements, program branching, Do-loops, formatting, subscripted variables, subroutines, double-precision, character manipulation, and flowcharting.

CS8-220 ADVANCED FORTRAN. Higher level aspects of FORTRAN are considered including advanced programming techniques, common block storage, advanced FORMAT, sequential files, and files manipulation.

CS8-250 COMPUTER PROGRAMMING WITH COBOL. Data organization and processing techniques used in large scale business, computer instruction codes, information storage and retrieval, and file maintenance. Cobol applications in production, accounting, payroll and other information processing areas.

CS8-280 COMPUTER WORKSHOP IN COBOL PROGRAMMING. Includes the following: Introduction of Cobol, analysis of Cobol Division, a survey of reserve words and action verbs: programming solutions to inventory, payroll, student records, sort/merge problems in Cobol for tape or disc.

CS8-300 USING THE STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES (SPSS). Utilization of SPSS integrated system of computer program for the analysis of social science data; types of analysis include descriptive statistics, simple frequency distributions, cross tabulations, simple correlation, multiple regression, and factor analysis.

CS9-100 NUMERICAL METHODS USING COMPUTERS. Numerical algorithms, techniques, and practical procedures for computer application. Standard algorithms from calculus,

linear algebra, differential equations, and numerical analysis are considered.

CS9-275 **ADVANCED COBOL.** Problems and principles in the automatic handling of large information files utilizing a variety of input—output and storage devices. Data processing, including searching, sorting, advanced programming techniques, file creation and file maintenance.

CS9-278 **PROGRAMMING WITH R.P.G.** The R.P.G. (Report Program Generator) course is designed to provide a broad foundation in R.P.G. as applied to the I.B.M. 360/370 and I.B.M. System/3. It includes applications to business oriented problems. Programming techniques such as matching records, chaining records, table look-up, and creating tape and disc files will be utilized.

CS9-280 **ASSEMBLER LANGUAGE: IBM 360/370.** Computer structure and system organization. Machine Language IBM 360 and 370 architecture, instruction execution, addressing techniques and digital representation of data; structure of assemblers; program segmentation and linkage; and macro facilities; numerical and non-numerical projects.

CS9-300 **APPLIED INFORMATION SYSTEMS.** Includes Information systems, file creation and maintenance, report generation and modeling and simulation.

CS9-990 **SEMINAR IN COMPUTER SCIENCE.** Topics in Computer Science.

COUNSELOR EDUCATION

CE8-100 **PRINCIPLES & PRACTICES OF GUIDANCE.** Provides the student with an understanding of the need, meaning and scope of guidance services. Principles and Practices involved in the following guidance areas are considered: introduction and philosophy of guidance, understanding the individual and his needs, essential orientation activities for the student, collecting, recording and evaluating data, interviewing and counseling, guidance through group activities, placement and follow-up activities, organization and evaluation of guidance and emphasis on the role of the classroom teacher in the guidance program. This course or its' equivalent is a prerequisite for all advanced courses in guidance.

CE8-200 **MEASUREMENT AND EVALUATION FOR COUNSELORS.** Measurement and evaluation techniques used by guidance counselors and school psychologists, the selection, administration, and interpretation of achievement, aptitude, interest and affective measures.

CE8-300 **TECHNIQUES OF COUNSELING.** An introductory level course in the basic fundamentals of counseling; required course for students majoring in Counseling or wish to be certified as Counselors in Massachusetts; in addition to the basic principles of counseling, students are involved in various role playing techniques; where applicable the case study techniques employed Prerequisite: Principles of Guidance.

CE8-400 **COUNSELING AND GUIDANCE IN THE ELEMENTARY SCHOOL.** The main objective of this course is to relate the field of Counseling and Guidance to the area of elementary education. In addition to the main objective, students will become acquainted with goal identification for behavioral growth, various counseling techniques, evaluation process, organization and administration of guidance programs within the elementary school setting. Prerequisite: Principles of Guidance.

CE8-500 **COUNSELING THE PHYSICALLY HANDICAPPED.** This course will present some of the basic disadvantages handicapped people face in our society today. Explore, education for the handicapped, specialized housing needs, job availability and how the state assists the handicapped.

CE8-550 **HUMAN AWARENESS AND CAREER DEVELOPMENT.** Evaluating their career potential thru humanistic techniques.

CE8-600 **STUDENT FINANCIAL AID: CURRENT POLICIES AND PROCEDURES.** A practical rather than philosophical approach to financial aid counseling. Working with actual case studies in need analysis, you will gain the techniques necessary to help students and parents. Topics include B.E.O.G., C.W.S., N.D.S. L. Scholarships, the National Task Force on Student Aid Problems (Keppel Commission), House Bill 3471 (O'Hara Bill), Financial Aid Packaging, and application procedures.

CE8-800 **SEMINAR: COUNSELING MINORITIES.** The aim of this seminar is multi-fold. It will attempt to provide present and prospective counselors with the necessary tools to enhance their professional relationships with the inner-city counselee. This seminar will focus on value clarification, minority history and culture as well as methods and techniques of counseling inner-city youth. Field experience will be an integral part of this seminar. Prerequisite: Techniques of Counseling and Consent of the Instructor.

CE9-140 **COUNSELING THE ALCOHOLIC AND DRUG ABUSER.** The scope of this course is to study alcohol and other drug abuse by investigating their historical importance and their present affect (socially, physiologically, psychologically) on individuals and society. Various treatment modalities will be examined and a comprehensive overview of community resources will be presented. The work of the counselor at school, in the home, and on the job will be stressed.

CE9-150 **COUNSELING STUDENTS WITH SPECIAL NEEDS.** Counseling students with special needs. Who are the special need students? What determines a child's placement in a special needs class? The role of a counselor in his approach, working with these special students. A look at the role Chapter 766 has played in meeting their needs. Exploring facilities that are available to these students outside of a regular school setting.

CE9-175 **SEMINAR IN INTERVENTION STRATEGIES.** Emphasis is on the current intervention strategies as applied to practical cases. Prerequisite: Minimum of 24 credits in the graduate school including Psycho-Educational Prescriptions.

CE9-200 **COUNSELING AND PSYCHOTHERAPY.** An advanced course incorporating the concepts and techniques of psychotherapy into school counseling to treat the personality and behavioral disorders frequently encountered in a school setting. Emphasis is on the use of sustained counseling to ameliorate some of the factors that hinder the learning process. Diagnosis, deciding course of treatment and dynamic factors involved in therapy are considered, Case material from the students; and instructor's work used for illustration of special problems. Prerequisite: Techniques of Counseling.

CE9-205 **THE GESTALT APPROACH AND TRANSACTIONAL ANALYSIS.** An advanced course designed to help students develop an in-depth awareness of an existentialist and revolutionary approach to counseling and psychotherapy. The course treats of the theories of Frity Perls and Eric Berne, utilizing a lecture, discussion and experiential approach to help the students explore these two models as therapeutic tools in terms of their applicability to individual and group situations.

CE9-210 **STUDENT APPRAISAL PROCEDURES.** Techniques for administering interpreting student-appraisal devices in elementary and secondary school programs; standardized and nonstandardized test devices; case study procedures.

CE9-250 **GROUP COUNSELING I.** A lecture-demonstration course designed to instruct the student in theories, methodology, and content of group counseling. The principles of group counseling, with an analysis of the

dynamics of the individual affecting and being affected by the group is covered. The types of group counseling considered will range from information type groups to encounter groups, with an emphasis on the use of groups within an academic setting. Emphasis also on the necessity for sensitivity in human relationships as the counselor works with groups of teachers, and parents in the solution of educational problems. Prerequisite: Techniques of Counseling Enrollment limited. Consent of instructor required.

CE9-251 **GROUP COUNSELING II.** A follow-up course to GROUP COUNSELING I which focuses on selected readings and provides an opportunity for students to develop their skills as facilitators or leaders by demonstration, practice and group feedback. Prerequisite: Group Counseling I or permission of instructor.

CE9-300 **INDIVIDUAL INTELLIGENCE APPRAISAL (WAIS-WISC).** Includes study of two major Wechsler tests, namely Wechsler Adult Intelligence Scale (WAIS) and the Wechsler Intelligence Scale for Children (WISC) Students will have opportunity for practical work in administration and interpretation of both these scales. Course is designed for classroom teachers, special education teachers, school psychologists, and guidance personnel. Certificate issued to those who complete the testing requirements under supervision. Prerequisite: Introductory Course in Measurement.

CE9-350 **INDIVIDUAL INTELLIGENCE APPRAISAL BINET.** This course will be concerned with a study of the origin and use of the Stanford-Binet Intelligence Tests. Students will learn how to administer, score, and interpret the 1960 revision of the Binet. Designed for classroom teachers, special education teachers, school psychologists, and guidance personnel. A certificate will be issued to those who complete the testing requirements under supervision. Prerequisite: An Introductory Course in Measurement.

CE9-375 **OCCUPATIONAL INFORMATION.** This course is designed to help administrators, counselors, and teachers to better meet the needs of youth through complete guidance techniques. The course is organized to help develop competencies in the following areas of Occupational Information: classification and description of jobs and industries, occupational trends in relation to socio-economic changes, collecting information, filing information and evaluating information about occupations and training. Emphasis will be placed upon the using of Occupational Information with groups and with individuals in the public school system. Prerequisite: Principles of Guidance.

CE9-400 **PSYCHOLOGY OF VOCATIONAL ADJUSTMENT.** The primary purpose of this course is to study the current theoretical modes of thought in Vocational Psychology and to compare them with one another in an attempt to create a synthesis of current research and theory that will be useful to the practicing counselor.

CE9-450 **ADVANCED PSYCHOLOGICAL TESTING.** An advanced survey of tests and testing procedures, with emphasis on psychological instruments for evaluating personality variables. Both objective and projective measures of personality will be studied, stressing use in non-clinical setting. Prerequisite: Measurement and Evaluation for Counselors.

CE9-500 **PUPIL PERSONNEL SERVICE.** This is a required course for personnel workers in the public schools. This course will introduce occupational, educational, and personnel career studies for appraisal and evaluation; roles, and responsibilities of various pupil personnel; use and function of school and out-of-school agencies; clinical procedures; a full review of the most important aspects of setting and appraising personnel programs on all levels will be stressed and studied. Prerequisite: Principles of Guidance.

CE9-550 **ORGANIZATION AND ADMINISTRATION OF GUIDANCE.** This course will acquaint guidance counselors and supervisors in the elementary and secondary schools with the latest procedures, techniques and problems in guidance programs. Analysis and discussion of unusual home-room community group and individual guidance problems will be stressed. Clinical guidance procedures, testing and the principles and methods of interviewing will be presented. Prerequisite: Principles of Guidance.

CE9-600 **STUDENT PERSONNEL SERVICES IN HIGHER EDUCATION.** Gives consideration to the philosophical background of student personnel services and surveys the various services provided in a Student Personnel Program on the collegiate level. Contemporary campus issues which relate to student life will be discussed. Provides the secondary guidance counselor with an over-view of those student personnel services which the college bound high school senior will find at his college or university. Prerequisite: Principles of Guidance.

CE9-900 **CURRENT ISSUES SEMINAR IN GUIDANCE AND COUNSELING.** A seminar conducted by the Counselor Education Staff. It is specifically designed for individuals who are directly involved in counseling or guidance in school and non-school settings. Topics include: Management of counseling organizations; career and avocational trends in the field of work and leisure; current counseling theory and application including behavior modification, ethical considerations for today's counselor; contemporary issues in testing and measurement; counseling the hard-to-reach, including the learning disabled, perceptually handicapped, the addict, the asocial, and others; community and consulting resources in the Metropolitan Worcester area; issues in professional growth and development; counseling the emotionally disturbed—identification and treatment; group processes in counseling and guidance.

CE9-800 **PRACTICUM IN COUNSELING.** This course is designed to give advanced graduate students opportunity to put into practice the various theoretical aspects of academic counseling and guidance which they have learned in previous courses. Registration is restricted to those concentrating in Guidance who have completed 3 guidance courses including Techniques of Counseling. Students will review the major areas of counseling theory, they will be supervised while giving individual academic counseling, finally they are aided in assessing the practice. 6 credits.

CE9-925 **SEMINAR: CURRENT ISSUES AND PROCEDURES IN CAREER COUNSELING.** Designed for educators interested in studying the most recent theories and techniques for career counseling and development of career education courses and programs within school systems; each of the following aspects of career development will be focused on at some point during the course finding self identity, search of interests, aptitude testing, values clarifying, vocational information and job search techniques.

CE9-950 **INTERNSHIP IN COUNSELING.** This course is a "Field experience" in the counseling area for students matriculated in the C.A.G.S. program in Counseling. Students will work in a Counseling Center under supervision and obtain experience in the day to day operations of a school or agency center. Actual counseling will be included in this experience. In addition to the field work students will participate in a weekly on Campus seminar. In order to register for this course students must obtain the consent of their graduate admission and course instructor. Course is required for all C.A.G.S. students who have not had one full year of paid counseling experience. Prerequisites: Limited to Advanced Graduate Students in the Counselor Education C.A.G.S. program: Consent of Advisor and instructor required. Limited enrollment.

EARLY CHILDHOOD EDUCATION

ED8-001 DEVELOPMENT OF ROLE IDENTITY IN YOUNG CHILDREN. The objective of this course is to develop in the student a sensitivity to how children imitate adult models and an awareness of the real world a child sees. Teachers, parents and professional personnel all play a pivotal role as evaluators and transmitters of concepts in education and vocations. Current research in these areas will be discussed especially in the areas of stereotyped roles due to race, creed, color, sex, social stratification and cultural influences.

ED8-315 DEVELOPMENT OF MATH ACTIVITIES FOR THE CHILD UNDER SIX YEARS OF AGE. Participants will be expected to: plan, prepare and produce a collection of mathematics materials, games and activities designed to help young children develop an awareness of and appreciation for mathematics; identify and classify the materials used to meet specific learning needs and styles of young children; read and report the related literature in the field of preschool mathematics; participate in and contribute to workshop sessions.

ED8-320 CURRICULUM FOR EARLY CHILDHOOD EDUCATION. Attention in this course will be focused on the curriculum and the daily activities designed to enable young children to use their developmental powers to the fullest. Students will consider the ways and means by which the teacher creates an environment rich in learning opportunities, geared to the age-level characteristics of young children. New Methods being implemented in England and the United States will be included.

ED8-325 CHILDREN'S LITERATURE & STORYTELLING FOR EARLY CHILDHOOD EDUCATION. Survey of quality literature appropriate for early childhood; the development of programs in literature, effective storytelling procedures, stimulating creative activities through books, poetry for the young child, award books, authors and their styles, and illustrators and their techniques.

ED8-330 METHODS AND MATERIALS IN EARLY CHILDHOOD EDUCATION. Attention in this course will be focused on the curriculum and the daily activities designed to enable young children to use their developmental powers to the fullest. Students will consider the ways and means by which the teacher creates an environment rich in learning opportunities geared to the age level characteristic of young children. Registration is limited to those interested in nursery and/or kindergarten programs.

ED8-331 LANGUAGE DEVELOPMENT AND READING READINESS IN YOUNG CHILDREN. Focuses on the role of language and its development in the total early childhood program. Topics include integration of listening, speaking, and writing skills; reading readiness and beginning reading skills; and the development of creativity in the various language arts facets. Integration of theory and practice in a preschool primary setting.

ED8-335 PRACTICUM IN EARLY CHILDHOOD EDUCATION. This supervised field experience involves daily interaction with young children of ages three-five who will be attending the Worcester State College Child Care Center; a seminar included. 3 credits each practicum.

ED8-346 EVALUATION AND REMEDIATION TECHNIQUES OF YOUNG CHILDREN WITH SPECIAL NEEDS. Concerned with the multi-disciplinary approach to the evaluation of children with special needs, this course focuses on techniques for remediation and planning for instruction. Through a variety of class activities and case studies, study will be made of the needs of the children with learning problems. Concepts and processes involved in measurement and evaluation and instruments specifically used in assessing children with special needs will be a major part of the course. Prerequisite: Experience with special needs children or permission of instructor.

ED8-347 DEVELOPING MATERIALS FOR YOUNG CHILDREN WITH SPECIAL NEEDS. Focus of this course shall be on the design and construction of materials to meet the specific needs of young children. Opportunities will be given to examine conventional materials and programs as they apply to children with special needs. A rationale for selection of materials for children with special needs shall be developed. Students will demonstrate competency by preparing and presenting learning plans and materials for actual or hypothetical special needs pupils. Prerequisite: ED8-345 or by permission of instructor.

ED8-390 SPECIAL PROBLEMS IN EARLY CHILDHOOD EDUCATION. This course will focus on the Child Development Association Competencies. The specific subject matter will vary from semester to semester in focusing on various competencies: the establishment and maintenance of a healthy learning environment, physical and intellectual competence, building positive self-concept and individual strength, organizing and sustaining the positive functioning of children and adults in a group, developing optimal coordination of home and centre child-rearing practices and expectations, and carrying out supplementary responsibilities related to the children's program.

ED9-291 INTERNSHIP IN PROGRAM DEVELOPMENT IN COMMUNITY EDUCATION. Designed to develop practical experience in the field in a leadership position. Placement under supervision in a community school or other approved agency. *Consent of the instructor is necessary for registration.*

ED9-295 INDEPENDENT STUDY IN COMMUNITY EDUCATION. Devised for graduate students with a background in Community Education. The student will work closely with the instructor in the compilation and development of information concerning a particular problem that is current in the field. *Consent of the instructor is necessary for registration.*

ED9-305 CASE STUDIES OF YOUNG CHILDREN. This advanced seminar enables workers with young children to make fuller use of school behavior as basic material for understanding personality, in order to make a creative adaptation of school life to individual needs of children. Specialists from the clinical fields present studies of children from the viewpoints of these disciplines. Each student undertakes a systematic exercise in gathering and interpreting material on an individual child. The process seeks to integrate intellectual achievement with patterns of inter-personal responsibility, taking account of the qualities of self-feeling and identity as projected on a behavior level.

ED9-320 INTELLECTUAL DEVELOPMENT IN EARLY CHILDHOOD EDUCATION. The purpose of this course is to study the intellectual levels of children based on current research including Piaget, etc. The common growth patterns along with exceptionalities will be studied.

ED9-325 EVALUATION OF THE YOUNG CHILD. Understanding and interpretation of the results of psychological and educational tests applicable for use with young children of preschool age; seminar and discussions of children in a variety of child care settings; special emphasis placed on giving teachers insights to children based on behavioral observations.

ED9-350 SUPERVISION AND ADMINISTRATION IN EARLY CHILDHOOD EDUCATION. This course will outline steps for the organization and administration of day care centers, nursery schools, and other programs which include children from the years 1-6. Curriculum planning and staff supervision will be discussed as will licensing procedures and funding resources.

ED9-360 THE PRE-SCHOOL CHILD WITH SPECIAL NEEDS. Detection, evaluation and remediation of learning disabilities in young children from three years. Emphasis placed on various informal and formal methods of assessment. Demonstration and use of existing programs and materials used with children.

ED9-380 SEMINAR IN EARLY CHILDHOOD EDUCATION. Current issues and problems in the field of Early Childhood Education will be discussed. Students will be able to integrate current early childhood educational research and literature to the philosophical and psychological understanding of the child.

ED9-385 INDEPENDENT RESEARCH IN EARLY CHILDHOOD EDUCATION. This course is for students wishing to pursue independent study in a specialized area of Early Childhood Education; greater understanding and appreciation of early childhood should result. Faculty members from other disciplines may also be called in to counsel the student in resources and approaches.

ELEMENTARY EDUCATION

ED8-405 CHILDREN UNDER STRESS. This course will deal with abuse/neglect, symptoms of child stress: disillusionment, symptoms of parental distress: resolution/community responsibility.

ED8-416 MODERN MATHEMATICS IN THE PRIMARY GRADES. The purposes of this course are to explore methods for coordinating mathematics activities, and to strengthen logical thinking as well as the typical quantitative skills associated with mathematics curricula for little children. Students will be expected to study commercial and teacher-made materials and to produce independent mathematics activities which can be adapted for use in the traditional and open classroom situations.

ED8-417 HUMANIZING SOCIAL STUDIES IN THE ELEMENTARY SCHOOL. The integration of the several areas of social sciences as they are related to the child and his environment. These areas will include: Sociology, Philosophy, Psychology, Economics, Anthropology, History and Geography.

ED8-418 DEVELOPING INDEPENDENT MATHEMATICS FOR CHILDREN. Purposes: To survey commercial materials and teacher-made games which can be adapted for use in traditional and open-classroom situations. To explore methods for co-ordinating mathematics activities to strengthen logical thinking as well as the typical quantitative skills associated with mathematics curriculums. To produce and organize many independent mathematics activities for your own classrooms in a workshop atmosphere.

ED8-419 MODERN MATHEMATICS IN INTERMEDIATE GRADES. The purpose of this course is to give the student a fundamental understanding of the concepts and techniques of arithmetic. Of major interest to the prospective and in-service teacher, the course presents the modern approach to elementary mathematics which concerns not only "how" but also "why" certain arithmetic operations are performed. The workshop format allows for students participation in providing manipulative and other means for plausible basic properties of the number system.

ED8-425 INDIVIDUALIZING INSTRUCTION IN ELEMENTARY SCHOOL. Several approaches to individualization in the elementary school; opportunity for design, try-out and evaluation offered; adaptation to individualization of present curricula encouraged.

ED8-426 NEW ELEMENTARY SCHOOL SCIENCE. This course is designed to prepare teachers in the philosophy, major objectives, teaching methodology and materials of the newer elementary science curricula. Emphasis will be placed on the process or "doing" of science rather than on the product or content of science. Materials will be developed for classroom use, and evaluated. These activities are aimed at developing a positive attitude toward the teaching of science at the elementary level.

ED8-427 SCIENCE ACTIVITIES FOR THE ELEMENTARY SCHOOL. This course will examine several approaches to the teaching of instruction in elementary school science. Teachers will have an opportunity to design science activities consistent with existing curricula. It is hoped that these activities will be tried out with children and evaluations made. Environmental education will be encouraged.

ED8-428 THE SUBSTITUTE TEACHER IN THE ELEMENTARY SCHOOL. This course is designed to acquaint the substitute teacher with the requirements and responsibilities of the temporary teacher. The relationships with the administration, fellow teacher and the children will be examined. Techniques of class control and instruction for real learning will be developed. Case studies, mini teaching, and evaluative procedures will be used.

ED8-430 ELEMENTARY SCHOOL CURRICULUM FOR THE 70'S. The investigation of developments in practices, materials of instruction and techniques, and unit and activity planning will be placed on types of lessons, techniques of assignments and diagnostic procedures.

ED8-440 WORKSHOP IN ECONOMIC EDUCATION IN THE ELEMENTARY SCHOOL. This workshop is designed to develop an understanding of the place of Economic Education in the Elementary School Curriculum. Programs, materials and teaching strategies in Economic Education will be analyzed. Each participant will design a teaching unit to be used in the classroom.

ED8-442 MUSIC IN THE ELEMENTARY SCHOOL. Designed for classroom teachers, the course explores the role of music in contemporary education and the musical concepts, skills, teaching methods and materials appropriate in the elementary school music program.

ED8-445 CAREER EDUCATION IN THE ELEMENTARY SCHOOL. The intent of this course is to focus upon the integration of career education into the elementary school curriculum; develop an understanding of the concept of awareness, objectives and evaluation of career education; and to involve the students in the community and the world of work.

ED8-450 INDIVIDUALIZING SOCIAL STUDIES IN THE ELEMENTARY SCHOOL-WORKSHOP. An intensive workshop focusing on developing a learning unit utilizing an activity card approach to individual or small group activities.

ED8-455 INTEGRATING ETHNIC STUDIES INTO THE CLASSROOM. This course is designed to meet the needs of classroom teachers in the area of multi-ethnic and multi-cultural teaching. Emphasis will be placed on the development of multi-ethnic and multi-cultural resources, background, and sophisticated knowledge of materials available. Philosophy consistent with multi-ethnic dimension of society.

ED8-460 METRIFY OR PETRIFY. The workshop is designed to provide educators with an understanding of the fundamental units of length, volume, mass, and temperature. The course will examine some of the derived units. A brief examination of the History and recent Legislation in regard to the use of Metric Systems will be included. Several Metric projects will be developed in class which will be adaptable in grades. K-8 Materials including visuals, will be evaluated. Lab fee: $12.00 (payable at first meeting to the Instructor).

ED8-461 METRIC WORKSHOP FOR THE CLASSROOM TEACHER. This course is designed to provide teachers with a hands-on approach to learning this simple and logical system that 95% of the world is presently using. The experimental approach will be accentuated. The major areas of concentration will be length, mass (weight), volume and temperature. Teachers will also have the opportunity to develop materials for use in their classrooms. In lieu of textbooks, teachers will be asked to pay an amount sufficient to cover the cost of materials which will be used.

ED8-465 **MUSEUM EDUCATION.** Children always look forward to museum field trips! But are these field trips always effective? With a knowledge of museums as educational resources these trips can become lasting experiences. Museums provide many other valuable services to teachers. This course will explore the many uses of museums as educational tools, and the techniques for integrating museum experiences with classroom activity. The course will include at least one field trip to an area museum. Classes will involve discussions, demonstrations, and other activities.

ED8-470 **LEARNING CENTERS: HELP OR HINDRANCE?** A consideration of the development of Learning Centers: the effectiveness and limitations; emphasis on techniques and approaches to their use.

ED8-475 **CREATIVITY.** A definition and consideration of the meaning of creativity; awareness of the creative person's characteristics; techniques for stimulating and developing creativity in the classroom. Creative expression through art, music, physical education, and dramatics as well as reading, science, social studies, and other subjects will be considered. Emphasis on helping class members to develop their own techniques and strategies for classroom use.

ED8-480 **STRATEGIES FOR BEHAVIOR PROBLEMS.** A consideration of the variety of techniques available for coping with behavior problems confronting teachers and parents. Special attention to Behavior Modification: Glasser's techniques of classroom management; cooperation of schools and parents.

ED8-490 **CREATIVE MATERIALS AND ENVIRONMENT IN THE ELEMENTARY SCHOOL.** Definitions of creativity and the characteristics of a creative person will be studied. The climate for creativity and stimulating creativity in the classroom will be developed. Creative expression through Reading, Science, Social Studies and other subjects will be explored. Opportunity will be provided for class members to develop their own techniques and strategies in class.

ED8-720 **COMPARATIVE EDUCATION.** Focus on differing organization and methods of education in several foreign countries.

ED8-757 **TEACHING HISTORY WITH FICTION.** Teaching history using mysteries, science fiction, historical novels; development of daily and long-range plans based on these types of fiction.

ED8-758 **ENVIRONMENTAL EDUCATION.** This course will help the current or prospective teacher develop environmental awareness, an ability to assess the significance of environmental problems and a confidence in interacting with agencies which plan, monitor, or regulate in the environmental area, in his students. The need is interdisciplinary and should be especially relevant in social studies, economics, governmental studies, and science areas. The class will discuss strategies and resources as well as develop a project for the participant's classes in an effort to involve todays youth in the current decision-making processes which are limiting the options of future generations.

ED8-770 **HUMANISTIC EDUCATION.** Approaches to blend affective and cognitive approaches to learning. Concentrates on students' values, feelings, and self-concept.

ED8-910 **USING THE COMPUTER AS AN INSTRUCTIONAL AID.** Features the use of the computer in the classroom and developing the Computer's Assisted Instruction. Computer languages used are COBOL on a batch-processing machine and BASIC in a time-sharing terminal environment.

ED8-927 **EDUCATIONAL MEASUREMENT AND EVALUATION.** This course considers the nature of measurement, its purpose and value in the learning situation, the types of measuring techniques to be employed. Attention is given to the development of certain statistical concepts, facility in the selection and use of measuring instruments, and in the interpretation of the data secured.

ED8-930 **CHAPTER 622: NATURE AND IMPLICATIONS.** A survey of Chapter 622 of the General Laws of the Commonwealth which bars discrimination in public schools, programs, activities, admissions, courses, etc. The course will examine the genesis and wording of the law and then progress to a study of the state-mandated regulation for implementation. The implication of the law will also be examined.

ED8-931 **CHAPTER 622: PLANNING AND IMPLEMENTATION.** This course will survey the specifics of implementing Chapter 622 in each area of public school education which it will affect.

ED8-935 **EDUCATION OF THE SELF.** This course gives students a chance to experience curricular approaches aimed at self-awareness and growth. The course will be based on such previously developed approaches as Values Clarification, Achievement Motivation, and Affective (Psychological) Education.

ED9-401 **WORKSHOP IN THE SCIENCE CURRICULUM IMPROVEMENT STUDY PROGRAM (SCIS).** This is the summer phase of a National Science Foundation School System Project. Its major goal is to prepare a nucleus of resource persons to implement this innovative elementary science curriculum in their school systems during the Academic year. This program is limited to systems that have already made a strong commitment to support this program. The systems involved are the Worcester Public and Parochial Schools and the Public Schools of Ayer and Shrewsbury. Others interested in similar future programs should contact: Professor Michael A. Burke, Dept. of Education.

ED9-407 **BEHAVIOR MODIFICATION.** The course will emphasize the various techniques and approaches to behavior modifications from the point of view of the teacher and the parent. Skinner, Rogers programs will be examined in detail.

ED9-408 **EDUCATION OF THE SLOW LEARNER.** This course is an overall consideration of the various methods and techniques for teaching the slow learner (I.Q. 70-90). In the light of current psychological findings concerning the slow learner; diagnostic and remedial measures will be studied and analyzed; development of curriculum; teaching strategies and environmental factors will be considered, illustrated and evaluated.

ED9-410 **THEORY AND RESEARCH IN THE ELEMENTARY SCHOOL CURRICULUM.** The purpose of this course is to develop the graduate student's ability to recognize, select, and pursue independent action research in one or more areas of the elementary school curriculum. These areas will be selected in conjunction with the graduate faculty members in Elementary Education who are qualified in the area of the student's choice. The student is expected to present frequent progress reports to the class. Experience in types and techniques of research, developmental study, and evaluation will be an integral part of the course. The completion of a substantial research project will be required of each class member. Prerequisite: Research in Education.

ED9-411 **ADAPTING SOCIAL STUDIES TO THE CHILD WITH SPECIAL NEEDS.** This course will focus on exploring social studies methods and materials adapted for differing learning styles: specifically involving thinking competencies, levels of conceptual development, language and organizational skills at the concrete, semi-concrete, and abstract levels. Research skills and pupil specialities for the gifted learner will be investigated as well as the philosophy underlying this approach to learning.

ED9-412 **INDIVIDUALIZING SCIENCE IN ELEMENTARY SCHOOL.** Approaches to individualism of instruction in elementary school science; opportunity to design science

activities consistent with individualization based on existing curricula; activities to be tried out with children and evaluations made. Environmental education encouraged; individualized course.

ED9-413 OPEN EDUCATION AT THE PRIMARY LEVEL. Workshop is designed to give participants experience in organizing an open classroom on primary levels. Activities will include the constructing of materials, the setting up of learning centers, the development of appropriate individualized programs, and the utilization of commercial materials. Prerequisite: one year of teaching experience.

ED9-414 TEACHING STRATEGIES FOR MULTI-ETHNIC STUDIES. This course is designed to meet the basic instructional needs required for the effective teaching of ethnic studies in today's classrooms. It will include the definition and scope of ethnic studies, significances, needs, trends, references, and resources.

ED9-415 OPEN EDUCATION AT THE INTERMEDIATE LEVEL. Workshop is designed to give participants experience in organizing an open classroom on intermediate levels. Activities will include the constructing of materials, the setting up of learning centers, the development of appropriate individualized programs, and the utilization of commercial materials. Prerequisite: One year of teaching experience.

ED9-416 IMPROVING SOCIAL STUDIES TEACHING STRATEGIES. A process approach to improving the conceptual and skill development of elementary students focusing on the cognitive and affective skills pertinent to the social sciences. Specific strategies such as inquiry learning, problem-solving, role-playing, gaming, and values clarification will be investigated and analyzed as learning tools for fostering the acquisition of knowledge in the social sciences.

ED9-417 SOCIAL STUDIES CURRICULUM AND MATERIALS. Current elementary curriculum will be explored for their structure, specifically in terms of their incorporation of the various social science disciplines. The role of content will be investigated with stress on current materials and trends such as cultural and global awareness, ethnicity, minority studies, sex-role stereotyping, and self-concept. Time and space relationships will be perceived through current curriculum analysis.

ED9-420 SEMINAR IN CURRENT ISSUES IN ELEMENTARY EDUCATION. Should be elected near the conclusion of the student's graduate program in Elementary Education; educational specialists meet with the students to present contemporary problems and to participate in discussions; content consist of current issues or questions raised by the students and others by the members of the Elementary Education Department's Graduate Faculty; symposium approach will be flexible and contemporary; readings, participation in the Seminar, and a written treatise of the pros and cons of major issues required. Prerequisites: Three courses at the graduate level in elementary education which have been approved by the student's advisor.

ED9-430 SEMINAR IN SOCIAL EDUCATION. A seminar for the advanced graduate student culminating his/her social education program. Current issues and problems will serve as initiators for individual research into relevant areas of investigation in social education. The class composition will determine much of the direction of the seminar. Prerequisite: Consent of instructor.

ED9-431 ECONOMIC EDUCATION IN THE ELEMENTARY SCHOOL. An understanding of the place of Economic Education in the Elementary School Curriculum; programs, materials and teaching strategies in Economic Education analyzed; participants expected to design a teaching unit to be used in the classroom.

ED9-720 ANALYSIS OF CLASSROOM INTERACTION. Inspection, discussion, use, and analysis of various systems of observing and recording classroom verbal and non-verbal behaviors; special emphasis on the Flanders System.

ED9-740 TEAM TEACHING IN THE MIDDLE SCHOOL. This course is designed to provide middle school teachers with those skills and competencies needed for team teaching in the Middle School.

ED9-750 BEGONE DULL GRAMMAR. Particularly for teachers who have to or want to teach grammar; review of causes for failures of past grammar approaches; experiencing of alternative approaches to achieve grammar objectives.

ED9-804 RECENT RESEARCH IN CURRICULUM DEVELOPMENT AND INSTRUCTION IN SCIENCE. Analysis of recent research in science education (K-12) and consideration of implications for curriculum designing in science and for improvement of classroom teaching. Consideration of research tools needed by teachers of science.

ED9-810 PRINCIPLES OF CURRICULUM DEVELOPMENT. Aspects of curriculum development—society, culture, learning theories, taxonomics of educational objectives, structure, hierarchy, balance, politics, strategy for change, and relationship to instruction.

ED9-820 EVALUATION OF CLASSROOM LEARNING. Focus on techniques of classroom evaluation, including stating objectives, devising learning contracts, observation techniques, and classroom test construction.

ENGLISH

EN8-112 HISTORY OF THE ENGLISH LANGUAGE. An historical examination of the phonology, syntax, and lexicon of English from its Proto-Indo-European origins to its contemporary dialects.

EN8-120 TECHNIQUES OF CREATIVE WRITING. An advanced Writer's Workshop for students who have taken previous Creative Writing courses or who have a considerable body of fiction or poetry to show. The course will be devoted to developing the students as writers as well as providing instruction in conducting Creative Writing Workshops, seminars, etc. Prerequisite: Consent of instructor is required.

EN8-121 PRINCIPLES OF JOURNALISM. An examination of the underlying nature of journalistic communication: the role of the press in society, the question of ethics and standards, the development of a critical awareness of the various modes of journalistic writing.

EN8-122 TECHNIQUES OF JOURNALISM. Provides practical instruction in the preparation of various types of news writing, development of a distinctively journalistic style, reporting techniques, interviewing methods, editing news stories, establishing and running a local newspaper.

EN8-150 LITERATURE OF THE BIBLE. The general purpose of this course is to examine biblical writings in the light of the time and events which produced them and to analyze various units in order to discern their literary excellence and their concern with the fundamental problems of man. Emphasis will be placed on the Old Testament.

EN8-160 MONSTERS IN MODERN LITERATURE. Five works of fiction: *Frankenstein, Dracula, The Portrait of Dorian Gray,* and *The Exorcist* will be explored in the context of a question: Is there a significant correlation between the ideals (or norms) of a society and the "monsters" that its artists create or return to?

EN8-210 INFLUENCE OF ROMANTICS ON MODERN POETRY. Impact of the major romantic poets, Wordsworth, Coleridge, Byron, Shelley and Keats on Twentieth century poetry.

EN8-216 CREATIVE WRITING IN POETRY. A workshop approach to develop the student's skill in the creation of poetry.

EN8-220 AMERICAN CIVIL WAR LITERATURE. The course will examine Whitman's *Drum-Taps* and *Specimen Days,* Crane's *The Red Badge of Courage,* Faulkner's *The Unvanquished* and some excerpts from fiction, poetry, songs,

and memoirs written during and after the War Between the States.

EN8-225 **ORAL INTERPRETATION OF LITERATURE.** The techniques of oral expression of literature applied to a variety of material, both prose and poetry; selections from lyric, narrative and dramatic sources are analyzed and presented by the student.

EN8-235 **WOMEN WRITERS.** A survey of work written in English by prominent 19th and 20th century women from Jane Austen to Joyce Carol Oates and Sylvia Plath. Emphasis is on the novel, but poetry and the short story are also included.

EN8-250 **LITERATURE AND SOCIAL CHANGE I.** A survey of literary works from the time of Swift through *1984* which expose the nature of and propose solutions to such social problems as repression, political exploitation and oppression, discrimination, drug exploration and abuse, and the failure of social institutions.

EN8-255 **LITERATURE AND SOCIAL CHANGE II.** Considers selected topics in the literature of social change. Concentrates on two or three social problems of contemporary concern and examines a number of literary works past and present which deal with each. Includes extensive outside reading and in-class presentation.

EN8-260 **LITERATURE AND SOCIAL CHANGE: SPECIAL TOPICS.** The course concentrates on two or three social problems of contemporary concern, examining a number of literary works past and present which deal with each. During the current semester we will examine the social implications of Romantic Individualism in the writings of authors from Blake, DeSade and Nietzsche to Shaw, Brecht and Camus.

EN8-270 **LITERATURE AND PSYCHOLOGY.** An examination of the function of literature in exploring the workings of the human mind in normal and abnormal states. It includes such writers, works, and subjects as James, Strindberg, Joyce, Stevens, *Hamlet, Lear, Oedipus,* surrealism, symbolism, stream of consciousness, archetypes.

EN8-290 **THE ADOLESCENT IN LITERATURE.** An examination of works in a variety of literary periods and genres which explore the nature and problems of adolescence. Particular attention will be paid to stories of initiation and the novel of development.

EN8-300 **HUMANISM IN THE ENGLISH RENAISSANCE.** Approximately half the course will be devoted to a study of humanist thinkers, both continental and English. The rest of the course will be spent examining the literary impact of humanist thought on Elizabethan & Jacobean writers.

EN8-310 **LITERATURE AND THE FIRST WORLD WAR.** Fiction, drama and poetry about the war by Owen, Brooke, Auden, Hemingway, Dos Passos, Faulkner, Shaw, Anderson, and others.

EN8-330 **THE CITY IN LITERATURE.** The literary response to the rise of the city. Works from the Romantic Period to the present are studied in terms of the writers' imaginative response to the urban phenomenon.

EN8-335 **THE MINORITY EXPERIENCE IN LITERATURE.** The role of literature in expressing the aspirations, problems, and realities of a variety of minority groups: women, Blacks, immigrants, Jews, and others.

EN8-350 **UTOPIA IN THE TWENTIETH CENTURY.** A survey of American and British Utopian Literature, focussing on H. G. Wells, Aldous Huxley and George Orwell.

EN8-370 **HISTORY OF SCIENCE FICTION.** An examination of the development of the genre from its origins in ancient civilizations to its present-day manifestations.

EN8-375 **FILM AND LITERATURE.** An examination of the relation between two modes of artistic expression which may determine modern aesthetic responses. Selected novels, short stories, plays and poetry and their film counterparts will be read and viewed in an effort to discover the interdependence of the two forms.

EN8-390 **SPECIAL PROBLEMS IN LITERATURE.** An open format course designed to provide a flexible response to student and faculty concerns and interests not anticipated in the over-all program. Appropriate topics would include intensive study of a single author, a specialized literary movement or a sub-genre of literature.

EN8-390 **SPECIAL PROBLEMS IN LITERATURE: SELECTED WRITINGS OF EDGAR ALLAN POE.** An examination of the poems, stories, and literary criticism of Edgar Allan Poe.

EN8-390 **SPECIAL PROBLEMS IN LITERATURE: THREE NEW ENGLAND POETS—DICKINSON, ROBINSON, FROST.** Emily Dickinson, Edwin Arlington Robinson, and Robert Frost resemble each other most in their independence as poets. Though their work is "native" and even regional in character, none of them is part of any clearly marked poetic school or movement. This course will be an in-depth study of the lyric poetry of these three poets.

EN8-420 **POE, HAWTHORNE, MELVILLE.** Concentrates on the three great American novelists of the nineteenth century who followed the Romantic impulse into its dark underside. By studying their reaction to Romanticism the course will define the qualities of the first appearance of mature, self-conscious American literature.

EN9-450 **REALISM AND NATURALISM.** This course deals with Realism as practiced by Mark Twain and clarified by William Dean Howells, and follows the transition of Realism to Naturalism under the influence of Frank Norris and Theodore Dreiser. Some major figures covered in this course include Mark Twain, Henry James, and Stephen Crane.

EN8-470 **WHITMAN TO GINSBERG.** How American poets responded to the expansive poetic theories of Walt Whitman; development of American poetry as a dialectic between those poets who responded sympathetically to Whitman's poetics and those who reacted negatively.

EN8-510 **THE THEATRE OF GEORGE BERNARD SHAW.** A study of the major plays and essays by the most prolific and influential playwright of the twentieth century. Particular emphasis on Shaw's prophetic vision, the evolution of his style, and the recurrent themes of his plays. Selected works from 1890 to 1950.

EN8-515 **SELECTED READINGS OF EDGAR ALLAN POE.** We piously imagine that behind the diversified Poe canon lurks a sufficiently coherent set of concerns, presuppositions, anxieties, hopes, etc., i.e. the Poe "Vision." The course will work through the writings in their diversity to this underlying perspective.

EN8-520 **EDGAR ALLAN POE: SELECTED WRITINGS.** An examination of the poems, stories, and literary criticism of Edgar Allan Poe.

EN8-600 **EIGHTEENTH CENTURY II: POPE AND SWIFT.** English literature of the early eighteenth century in terms of its social, religious, and philosophical milieu; the nature of neo-classicism, the strategies of Augustan satire, and the emergence of the novel. Prerequisite: EN120.

EN8-610 **SEMINAR IN WILLIAM BUTLER YEATS.** This course will offer an appraisal of most of W. B. Yeats' major poems and plays, with some attention to his essays. It will also examine his mystical and historical treatise *A Vision* and its relationship to his best known creative work.

EN8-620 **KURT VONNEGUT, JR.: SELECTED WRITINGS.** An examination of the stories, plays and essays of Kurt Vonnegut, Jr.

EN8-730 **BICENTENNIAL VISTA: LITERARY IMAGES OF AMERICA.** On the eve of the American Revolution a French immigrant named Crevecoeur wrote an essay on the question "What Is an American?". This course will explore his

question & related ones in selective essays, plays, poems, and fiction from colonial times to the present. It will look at the American experience primarily as seen by writers such as Hawthorne, Whitman, Henry James, H. L. Mencken, Robert Lowell, and James Baldwin—secondarily through the eyes of foreign writers. This is a non-technical course open to students without previous background in literature courses. The student may elect to write a course paper or deliver an informal oral report in class.

EN8-740 THE ROMANTIC MOVEMENT: INFLUENCE ON THE TWENTIETH CENTURY. An examination of the major Romantic poets (Blake, Wordsworth, Coleridge, Shelley, Byron and Keats) and their twentieth century counterparts. The purpose of this course will be to examine the different forms and ideas of the concept of Romanticism, to assess Romantic notions of the functions of poetry, and to estimate the social and aesthetic implications of Romantic doctrines.

EN8-760 THE WORLDS OF CHARLES DICKENS. Major aspects of the life and art of Dickens will be examined in a variety of contexts: Dickens as (1) humorist and satirist, (2) symbolist, (3) novelist, (4) social and political critic, (5) Victorian feminist. The course will draw on a small body of excerpts from letters, stories, and novels but focuses on four novels: *Pickwick, Oliver Twist, David Copperfield,* and *Great Expectations.*

EN8-780 THE "VICTORIAN" FEMALE. A study of the roles and stereotypes of English women in works by Austen, Byron, Dickens, Thackery, Shaw and others.

EN8-840 MODERN POETRY. A study of some of the major figures who shaped American and British poetry between 1910 and 1950; Hardy, Yeats, Pound, Williams, Eliot, Frost, and Stevens. Emphasis will be on the study of major texts and on certain lines of development, particularly the "international" and the "colloquial" lines.

EN9-111 HISTORY OF LITERARY CRITICISM. An evaluation of the development and implications of literary criticism from the time of Plato and Aristotle to the present.

EN9-113 LINGUISTICS. A study of the phonological, syntactical, and semantic dimensions of language as revealed by traditional, structural, and transformational-generative grammarians.

EN9-400 THE COLONIAL EXPERIENCE IN AMERICAN LITERATURE. A study of seventeenth and eighteenth century American literature from its Puritan origins to Benjamin Franklin. The distinctive and original response of the colonialists to the American experience will form the central concern of this course.

EN9-430 THE ROMANTIC FLOWERING IN AMERICAN LITERATURE. A study of the American reaction to the Age of Reason. This course will follow the development of Romantic Idealism in the origins of a fiction and a nature poetry specifically American. Since Romantic ideals in America reach the apex of their philosophic expression in Transcendentalism, Emerson and Thoreau will form a major part of this course.

EN9-460 THE AMERICAN NOVEL OF THE TWENTIETH CENTURY. This course begins with the American naturalistic novel and ends with the latest fiction of the seventies. The main concern of this course will be to trace the response of American novelists to the chaotic developments of the twentieth century.

EN9-510 MEDIEVAL LITERATURE. An examination of the most significant literary works of the Middle English Period (1100-1500) including the evolution of the Romance, the Alliterative Revival, and such major works as *Piers Plowman, The Pearl,* and *The Canterbury Tales.*

EN9-520 THE DRAMA TO 1642. A survey of English drama from its earliest beginnings to the Interregnum: representative medieval morality and miracle plays, and the major comedies and tragedies of the Elizabethan-Jacobean period, including works by Marlowe, Jonson, Dekker, Middleton, Webster, Tourneur, and other contemporaries of Shakespeare.

EN9-530 THE RENAISSANCE. An examination of the intellectual background literature of the sixteenth century as provided by the prose works of Pico Mirandola, Machiavelli, Thomas More and Erasmus; and the poetry of Wyatt, Surrey, Sidney, and Spenser.

EN9-555 EXPLORATIONS IN SHAKESPEARE. The major comedies, tragedies, and histories of the Master will be read and examined as representing the pinnacle of artistic achievement within the framework of the Elizabethan-Jacobean dramatic tradition.

EN9-560 SHAKESPEARE I. Comedies and history plays.

EN9-562 SHAKESPEARE II. An examination of the major tragedies.

EN9-570 THE SEVENTEENTH CENTURY. Donne and the Metaphysical poets, Jonson and Milton. Emphasizes the poetry of the period, excluding the drama and epic.

EN9-600 THE DEVELOPMENT OF THE NOVEL. A consideration of the rise and development of the genre through the works of several of its major practitioners.

EN9-650 THE AGE OF REASON. An introduction to the thought and literary work of England from the overthrow of the Puritan regime (1660) to the American Revolution. Authors to be emphasized in this period of acute social self-consciousness are Dryden, Pope, Swift, Johnson, and such representative playwrights as Congreve, Sheridan, and Goldsmith.

EN9-710 THE 19TH CENTURY ENGLISH NOVEL. Readings will include selections from the novels of Austen, Thackeray, Dickens, Eliot, Hardy, Conrad and others.

EN9-720 BLAKE, WORDSWORTH, COLERIDGE. Close readings in the major "first-generation" Romantics with close attention to the definition of Romanticism: the primacy of imagination, the dominance of individualism, the powers of the poet.

EN9-725 ROMANTIC POETRY: SHELLEY, BYRON, KEATS. The second phase of the Romantic Revolution is examined with attention to changes in the theory and practice of poetry.

EN9-770 VICTORIAN POETRY. Major poets of the period, Tennyson through the early Yeats.

EN9-820 MODERN BRITISH LITERATURE. The course will focus upon the major prose fiction of the period—Joyce, Lawrence and others, but will devote some attention to related contributions in the other genres.

EN9-870 MODERN DRAMA. A survey of British, American, Irish and Continental drama from Ibsen through O'Neil. Particular emphasis on modern drama as it reflects the social and philosophical dilemmas of the twentieth century.

EN9-880 TWENTIETH CENTURY VERSE DRAMA. An intensive examination of the verse plays of Yeats, Eliot, Fry, and Maxwell Anderson.

EN9-900 SEMINAR. Provides the opportunity for the student to explore the works of one or two major authors in depth. May be repeated for credit with a change of subject matter. Seminar subjects under consideration for the present academic year include Yeats, Blake, Lawrence, Joyce, Wright and Baldwin, Fitzgerald and Hemingway.

HEALTH EDUCATION

HE8-001 ACUPUNCTURE: ANCIENT MEDICINE FOR TODAY. This course, designed for the laymen, will focus on the multitude of ways that acupuncture can and will be used in our world today. A description of the acupuncture

system, a brief look at the laws that govern it, and how it may be integrated with the health care delivery system in this country, are several areas that will constitute the main dimensions of this course.

HE8-005 **WOMEN AND THEIR SEXUALITY.** This course deals with the physical and emotional aspects of womanhood and covers such topics as human sexuality, women's health programs and implications of contemporary life styles. It will cover the concept of good health both physically and emotionally and will also deal with woman's search for self-actualization. Men are invited and welcomed to the course. Class limited to 30.

HE8-100 **PHILOSOPHY OF HEALTH.** What is the relationship between philosophy and health? Perennialism, existentialism, pragmatism and Zen Buddhism will be viewed in relationship to the issues and problems of the health field. Emphasis will be upon the development of a personal philosophy of health in the contexts of philosophy and health. Philosophical ideas concerning human nature, society, reality, knowledge, value and the Ultimate will be explored.

HE8-120 **HEALTH AND NUTRITION.** Fundamental principles of human nutrition; physiological and chemical bases for nutrient needs for all ages, and factors to consider in meeting these needs for individuals and groups. Applications of concepts studied to teaching health will be discussed.

HE8-175 **CREATIVE TEACHING IN HEALTH.** Discussion of content, methods and skills of teaching health education at the elementary/secondary level. Emphasis placed on the creative aspects of teaching with a focus on values clarification, positive attitude building, and development of positive health behavior in each student. New materials in health teaching will be used and discussed.

HE8-200 **PERSONAL HEALTH.** Basic scientific principles in the health sciences; a conceptual approach to the physical, mental, and social dimensions underlying personal health; motivation for intelligent self-direction of health behavior; emphasis upon responsibilities as citizens, teachers, and parents.

HE8-210 **CONSUMER HEALTH.** By the end of the course students will demonstrate: an understanding of the Scientific Method and its relation to advances in medicine; an understanding of the principles of advertising and its relation to the purchase of health products and services; skills in researching medical facts; skills in selecting medical care; and understanding of how to finance medical costs.

HE8-250 **HUMAN SEXUAL AWARENESS.** Utilizes a graded, developmental and sequential series of small group experiences designed to assist students in coming to a state or condition of positive sexuality concept regarding his or her own sexuality. Emphasis is placed on the "I" rather than the "We" of thinking and feeling.

HE8-260 **HUMAN SEXUALITY AND SEX EDUCATION.** Examines physiological, psychological, sociological, philosophical, and historical background of sexuality. Techniques and methods for this subject area in the elementary/secondary school are emphasized.

HE8-275 **SCHOOL HEALTH COUNSELING.** The primary goal of this course is to help those teachers who find themselves, from time to time, working with individuals and groups in "non-official" counseling type situations. A secondary, but no less important, goal of this course is to provide teachers with the skills and knowledge that are necessary in order to apply counseling techniques to their own teaching situation. Subjects to be covered will include: establishing a climate for effective counseling; an overview of counseling approaches; counseling techniques and strategies; typical problems in counseling; application of techniques to counseling; evaluation.

HE8-330 **VALUES CLARIFICATION IN HEALTH EDUCATION.** Teachers are trained in approaches such as rank-ordering, continuum, criteria of a value, the valuing process, techniques for enhancing the "valuing strength" of each child, and a host of strategies designed to aid youngsters in developing this vital kind of awareness. Class will involve teacher participants in experiences for clarifying their own values that are easily transferable to classroom.

HE8-350 **GROUP PROCESSING IN HEALTH EDUCATION.** An in-depth clarification process of dynamics that form the emotional componants of health-producing growth, relationships, and responsibility of the individual. Critical attention is focused on personality and behavioral factors of the teacher as contributing to classroom atmosphere. By the conclusion of the course, students will demonstrate competencies in facilitative leadership, awareness of group dynamics that tend to foster emotional and physical health, and of techniques and skills in health education.

HE8-400 **MENTAL HEALTH EDUCATION IN THE SCHOOLS.** Examines the interpersonal and decision-making skills which contribute to an individual's mental health and how these skills can be taught within the framework of the health education program. Students will develop and sharpen their own interpersonal and decision-making skills in order to teach these skills. The INSIDE/OUT Health Education T.V. series and other health education materials will be used throughout the course to develop teaching skills.

HE8-415 **AGING, DEATH, AND SUICIDE EDUCATION.** Content to be covered in this course will include: exploding the mythology and stereotyping concerning death, suicide and aging: typical difficulties in coping with death, bereavement, aging, and suicidal impulses; available alternatives for coping, and; suicide prevention measures.

HE9-100 **SCHOOL HEALTH COORDINATOR.** By the end of one semester, all students in this class will demonstrate: a knowledge of the school health program, the skills needed by the coordinator to plan and evaluate said plan; the skills to inservice and lead health teachers; and the skills needed to work with the community to insure the inclusion of a quality health education program in the offerings of the local school district.

HE9-200 **STRENGTH TRAINING IN HEALTH EDUCATION.** This class/workshop is designed to help teachers learn to cope constructively with emotions generated by the kinds of stressful situations commonly experienced when working closely with children and youth in school settings. The course is based on a model that was developed at the Center for Humanistic Education at the University of Massachusetts. Both co-leaders have had first hand experience in the model.

HE9-300 **DRUGS, ALCOHOL, TOBACCO: IMPLICATIONS FOR INDIVIDUAL AND SOCIETAL HEALTH.** By the end of one semester, all students will demonstrate an understanding of how drugs are used and abused, the impacts of abuse on the individual and society, and possible ways of stemming problematic use of drugs.

HE9-500 **INDEPENDENT STUDY IN HEALTH EDUCATION.** Open to graduate students who are capable of developing a problem independently. Problems chosen by the student and developed through conference with the instructor.

HISTORY

HI8-001 **THE FIRST AMENDMENT.** The First Amendment has been perhaps the most important law protecting individuals—and their individuality. Through the years, legal challenges have been made to the limits of each area cited in the law. Very interesting concepts have been derived. At each session of the course one area of the amendment will be presented and explored through historical and current court decisions and the present applications. Sponsored by the American Civil Liberties Union of Worcester.

HI8-002 **THE NIXON ADMINISTRATION.** A study of the foreign and domestic aspects of the Nixon administration, with particular emphasis on the rapproachment with the Soviet bloc, Watergate, and the struggle to curb inflation.

HI8-003 **THE SOVIET UNION SINCE KHRUSHCHEV (1964-1974).** This course will analyze the major political, economic and diplomatic developments since the removal of Nikita Khrushchev from power. Special attention will devoted to the nature of dissent which has become very conspicuous since 1964.

HI8-050 **AMERICAN REVOLUTION BICENTENNIAL WORKSHOP.** Study and discussion of basic aspects of the revolution, problems and accomplishments of the period. Consideration of different interpretations of the American Revolution, field trips, Bicentennial celebration projects. The meaning of the revolution then and now.

HI8-100 **ORAL HISTORY.** A basic course covering the nature of oral history, the oral tradition which has a long and honorable tradition. The course has a visual dimension: the student is offered the opportunity to place the interview into a larger context by accompanying the oral record with an in-context visual record; e.g., through a series of photographic slides or video tape.

HI8-105 **HISTORY OF WESTERN LAW.** The rise of law among the near-eastern peoples; Hebrew, Greek, and Phoenician Law; the rise of Roman Law during the periods of the Republic, the Principate, and the Empire; codification of law under Justinian; the rise of the Common Law in England; conflict between Common and Roman legal systems; spread of the two basic systems of law to the New World.

HI8-110 **HISTORY OF COLONIAL NEW ENGLAND: THE SETTLEMENTS.** A study of selected problems and topics in the early settlements of New England. International rivalries, governmental forms, economic foundations, social conditions and the Puritan family will be studied. Individual assignments and discussion of different viewpoints will be a major part of this course.

HI8-115 **NEW ENGLAND HISTORICAL MUSEUMS AND RESTORATIONS.** The course will include a survey of the development of historical museums and restorations in this area. Visits to a number of museums and restorations will be included. Emphasis will be placed on the types of work done and vocational opportunities in museums, restorations, and archives.

HI8-120 **THE AMERICAN REVOLUTIONARY PERIOD AND THE MAKING OF THE CONSTITUTION 1763-90.** The period of domestic and foreign concerns; the troubles with England; military aspects of the Rev.; the Articles of Confederation; the Constitution and the Bill of Rights. Prerequisite: 1 year U.S. History.

HI8-130 **CIVIL WAR AND RECONSTRUCTION.** Sectionalism, slavery and modern industrial warfare and their impact on the political and racial fabric of America.

HI8-140 **20TH CENTURY U.S. HISTORY.** Political, foreign, social and economic affairs of the Truman, Eisenhower, Kennedy, Johnson and Nixon administrations. The Black Revolution of the 1950's, Student Revolution of the 1960's and Watergate.

HI8-150 **U.S. HISTORY SINCE 1945.** The domestic and foreign policy of the Truman, Eisenhower, Kennedy, Johnson, Nixon, and Ford administrations, with concentration on the forces that made these administrations significant in American history. Political, social, and economic forces will be analyzed.

HI8-200 **AMERICAN INDIAN: PAST AND PRESENT.** The part played by the American Indian in the development of America; the encounter between Indian and European civilization and the inter-relationship between Indian culture and Indian history.

HI8-205 **THE ADAMS CHRONICLES.** Utilizing Public Television's Major Bicentennial Series in conjunction with assigned text readings, this course enables the student to reflect upon the American past, present and future; to explore what kind of nation we were, what kind of nation we have become, and what kind of nation we should be. The thirteen-week series dramatizes 150 years of a family that helped to design, preserve, and expand the American Republic. The series not only conveys a vivid sense of the people of the Adams' generations, including Jefferson, Hamilton, and Franklin, but also examines many of the basic issues of their time and ours: issues of freedom and justice, of government and social life.

HI8-210 **AMERICAN IMMIGRATION HISTORY.** Theories of migration and assimilation, nativism, old world backgrounds, immigrant religious and political institutions, the adjustments of various groups, and immigration legislation. Discussions, lectures, and papers. Prerequisite: 1 year U.S. History.

HI8-215 **AMERICAN SOCIALISM.** This course will examine socialism in America's past and present. The factors which have influenced American socialism will also be examined.

HI8-220 **U.S. CONSTITUTIONAL HISTORY.** The development of American constitutional thinking as revealed by decisions of the U.S. Supreme Court from the making of the Constitution to the present. Prerequisite: 1 year U.S. History.

HI8-310 **CIVIL LIBERTIES.** American civil liberties as they have been interpreted by the Warren-Burger courts; religion, freedom of communication, association, freedom of peaceable assemble and petition, rights of criminal defendants, etc. Prerequisite: 1 year U.S. History or Government.

HI/PO8-315 **ORGANIZED LABOR: A CONTEMPORARY VIEW.** This course will examine the American labor movement from a historical perspective as well as examining the position of organized labor in the United States today. The relationship of the AFL-CIO to the Democratic Party will be discussed.

HI8-320 **WOMEN IN AMERICA.** An examination of women's contribution to the nation's social, economic, and political life from the colonial era to the present; an analysis of women's role in general with special attention given to remarkable American women.

HI8-326 **UNITED STATES FOREIGN POLICY IN TRANSITION: 1861-1920.** A study of the history of U.S. foreign policy from the Proclamation of the Union blockade through the United States' emergence as a world power and down to the apparent return to a more traditional American foreign policy as signified by the presidential election of 1920.

HI8-330 **AMERICAN-RUSSIAN RELATIONS: 1781-PRESENT.** This course will analyze American-Russian relations from the eighteenth century to the present. Special attention will be devoted to the origins of the Cold War and the meaning of detente. Prerequisite: 1 year of college level history.

HI8-335 **U.S. AND EAST ASIA IN THE 20TH CENTURY.** America's role in East Asia up to the present; the China Trade; American-Japanese relations during the 1930's; World War II; U.S.-Chinese Communist relations and America's involvement in Indochina.

HI8-400 **EUROPE IN THE 17TH & 18TH CENTURIES.** The emergence of Europe as a world center; the political development and international relations in the unique formation of the modern state system; the rise of science and baroque culture; the economic revolution; political philosophy and the Enlightenment.

HI8-410 **HISTORY OF IRELAND TO 1801.** A study of the transformation of Ireland from ancient times to a modern nation conquered by the English with no hope of liberation in sight. Various problems presented by the fusion of Gaelic, Latin, Scandinavian and Norman Ireland will be examined.

HI8-415 **HISTORY OF IRELAND SINCE 1801.** Preparation for a thorough understanding of Ireland today. History and historiography plus political and social aspects of Ireland since 1801.

HI8-420 **HISTORY OF ENGLAND 1485-1714.** The significant changes in English economics and politics from the beginning of the Tudor era to the end of the Stuarts; emphasis on the impact of the English Reformation and the vicissitudes of the monarchs and the evolution of Parliament, the structure of society, the foreign relations; attention given to the emergence of Ireland as a domestic issue.

HI8-430 **ENGLISH CONSTITUTIONAL HISTORY.** English constitutional development from the coming of the Anglo-Saxons to Britain through the present time.

HI8-440 **TUDOR-STUART ENGLAND.** Changes in English economics and politics from the beginning of the Tudor era to the end of the Stuarts; the impact of the English Reformation and the vicissitudes of the monarchs; the evolution of Parliament; the structure of society; the growth of the colonial empire; the development of foreign relations; the emergence of Ireland.

HI8-450 **HISTORY OF MODERN GERMANY TO 1914.** Political, social and cultural history emphasizing the strong individualities of various local areas and the search for a political and institutional compromise between them. Important for those who intend to understand the origins of the mass politics in the German-speaking world.

HI8-460 **HISTORY OF MODERN GERMANY SINCE 1914.** This course will focus upon the emergence of mass politics and hysteria in German society; the conflict of ideologies and rationalization of violence.

HI8-500 **RUSSIAN HISTORY FROM EARLIEST TIMES TO PETER THE GREAT.** The course will survey the course of Russian history from the tribal period to the ascension of Alexander II. A balance between economic, social, political, and intellectual developments will be employed to examine the cause and effect of Russian history. Both the forces and the men who shaped events will be discussed.

HI8-510 **RUSSIA FROM PETER THE GREAT TO THE COLD WAR.** Russia in the modern era—the last 225 years. A great panorama of radical change, stress and turmoil during which Russia becomes the epitome of 20th century totalitarian power and produces some of the greatest creative art in the history of civilization.

HI8-520 **SOVIET FOREIGN POLICY.** Analysis of the History of Soviet Foreign Relation under Lenin, Stalin, Krushchev and Brezhnev: The role of ideology in the formulation and implementation of Soviet Foreign Policy. Russia's relations with developing countries as well as the Sino Soviet rift will be closely examined.

HI8-530 **RUSSIA AND THE MIDDLE EAST.** This course will focus upon Russia's relations with and interest in the Middle East. Special consideration will be devoted to such topics as the Soviet Union Zionism, the Straits issue, and Russia's relations with Israel and the Arab world.

HI8-600 **ISLAMIC HISTORY I.** The rise and expansion of Islam, its beliefs and duties, the Caliphate, the Arab empire, the Arab-Muslim civilization and the decline of Medieval Islam.

HI8-610 **MIDDLE EAST HISTORY II.** The rise and expansion of Islam, the Caliphate, the Muslim civilization, the East-West confrontation; the rise and decline of the Ottoman Empire, its institutions, European colonialism, Ottoman reform and problems, World War I, and the emergence of new independent states.

HI8-615 **THE RISE OF THE CONTEMPORARY MIDDLE EAST.** This course describes and analyzes the forces which have shaped the course of modern Middle East history ever since the closing decades of the 19th century. Important topics include the penetration of the Ottoman Empire by the Western Powers, the balcanization of the Middle East in the first World War, the struggle for Palestine and the resultant Arab-Israeli conflict.

HI8-650 **MODERN AFRICAN HISTORY (SUB-SAHARA).** This course will deal with the major political, cultural, economic and international aspects of sub-Sahara Africa from modern times to the present. Special attention will be devoted to the emerging independent African states during the present century.

HI8-700 **JAPAN IN THE TWENTIETH CENTURY.** After a brief survey of pre-twentieth century patterns, this course will focus upon major political, economic and diplomatic currents during the present century. Special consideration will be given to Japanese militarism, Japan's role in World War II, the Occupation and the contemporary scene.

HI8-800 **TOTALITARIAN PATTERNS OF GOVERNMENT.** The nature, basic philosophy and implementation of the three typical modern totalitarian types of government—Communism, Fascism and Nazism.

HI8-810 **COMPARATIVE REVOLUTION.** The causes and dynamics of major revolutionary movements and ideologies in Western history; extensive discussion of readings.

HI8-820 **CIVIL-MILITARY RELATIONS.** This course will examine the emergence of the modern military establishment and its impact upon the political and social institutions of various nations. Examples will be drawn primarily from France, Germany, and the United States. However, the Third World will also be considered. Prerequisite: 1 year of college level history.

HI9-100 **THE STUDY & WRITING OF HISTORY.** The methods used by historians in scholarly research; the styles of representative historians; historiographical issues and the philosophy of history. Course required for all history concentrates in the Master's program; other with consent of instructor.

HI9-120 **GREAT HISTORIANS OF EUROPE.** Major historians of modern Europe relative to schools of historical thought, attitudes and methods, with research emphasis on the writing of history and discussion of the findings of students.

HI9-210 **HISTORY OF COLONIAL NEW ENGLAND: THE 18th CENTURY.** Study of growth and development of the English colonies in America in the 1700s. Consideration of economic, political, imperial, social, and intellectual changes in the period before the Revolutionary era. Individual assignments will involve a critical examination of both original and secondary sources relating to the development of the colonies.

HI9-220 **THE AMERICAN REVOLUTIONARY ERA.** In-depth study of the period 1763-1789. Extensive readings. Different interpretations of subject matter will be discussed. A term paper based on original sources will be required.

HI9-410 **EUROPE IN THE 19TH CENTURY.** An evaluation of the society of the Ancien Regime and the French Revolution; the dictatorship of Napoleon and his reorganization of Europe; the development of liberalism, nationalism and socialism; the establishment of the second French Empire; the unification of Italy and Germany.

HI9-420 **HISTORY OF EUROPE 1815-1914.** An evaluation of the society of the Ancien Regime and the French Revolution; the dictatorship of Napoleon and his reorganization of Europe; the development of liberalism, nationalism and socialism; the establishment of the Second French Empire; and unification of Italy and Germany.

HI9-430 **20TH CENTURY EUROPEAN HISTORY.** The politics and diplomacy of World War I; its aftermath; the world depression; the rise of the totalitarian regimes; the

years of appeasement; details of Hitler's Europe and the origins of post World War II problems; the confrontation of the superpowers; the liquidation of the colonial empires; the transformation and reconstruction of western and central Europe.

HI9-440 HISTORY OF EUROPE, 1914-39. The politics and diplomacy of World War I; its aftermath; the world depression; the rise of totalitarian regimes; and the years of appeasement.

HI9-450 EUROPE SINCE 1939. Details of Hitler's Europe and the origins of post World War II problems; the confrontation of the super-powers; the liquidation of the colonial empires; the transformation and reconstruction of western and central Europe.

HI9-460 EUROPEAN INTELLECTUAL HISTORY FROM THE ENLIGHTENMENT TO THE PRESENT. The major ideas of the era; Utilitarian, Nationalist and Socialist schools; Fascism, Communism and Liberalism.

HI9-470 MODERN FRANCE. Selected topics dealing with France from the Revolution to the Fifth Republic.

HI9-510 RUSSIA IN THE ERA OF CATHERINE THE GREAT. Catherine II and her Russia studied in depth and detail in a multitude of aspects-social, political, economic and religious; foreign policy, Pugachev's revolt, Catherine's personality and personal history as well as her attitude toward the Enlightenment and the French Revolution discussed; Catherine is undoubtedly one of the most fascinating figures in history and a vital part of that she ruled Russia in a significant era.

HI9-520 RUSSIA IN THE 20TH CENTURY. Major political, economic and diplomatic developments in Russia during the present century; Leninism; the Revolutions of 1917; Stalinism; Khruschchev; and the period since 1964.

HI9-530 THE MIND OF MODERN RUSSIA. An analysis of the major attitudes and ideas that have shaped the Russian mind from the Muscovite era to the present. Special attention will be devoted to religious themes, Marxism, and the nature of dissent.

HI9-540 MARXIST THEORY. Its historical framework; Marx's predecessors and heirs; the implications and implementations of the theory under Trotsky, Stalin, Mao Tse-tung, etc. For grad. students

HI9-550 EAST EUROPE SINCE 1945. The major political, economic and inter-bloc relations since World War II. Special attention will be devoted to the Soviet seizure of power and the emergence of bloc autonomy.

HI9-600 THE CONTEMPORARY MIDDLE EAST. The eastern Mediterranean world in the 20th century; problems of the new nations of the area and conflicts among them; the role of the major powers in this region.

HI9-700 CHINA IN THE 20TH CENTURY. Major political, diplomatic and intellectual developments in China during the present century; the origins of Chinese Communism, the civil war and the People's Republic of China since 1949.

HI9-900 SEMINAR IN EUROPEAN HISTORIOGRAPHY. Schools of historical thought, attitudes and methods, with research emphasis on the writing of history and discussion of the findings of students. Designed for grad. students; others with consent of instructor.

HI9-910 SEMINAR IN MEDIEVAL MIDDLE EAST HISTORY. Extensive readings, research, discussion and writing. Two research papers are required on problems selected by the students and approved by the Instructor. Strictly for graduate students. Prerequisites: Middle East History I.

HI9-920 SEMINAR ON AMERICAN CONSTITUTIONAL HISTORY. Topics such as the Marshall court, the Taney court, the Warren-Burger court, etc. Seminar will vary depending on needs of the students. Prerequisite: 1 yr. U.S. History or Government.

HI9-990 THE SHAPING OF THE EUROPEAN MIND. A study of the Utilitarian, Nationalist and Socialist schools; Fascism, Communism and Liberalism.

LANGUAGE ARTS

ED9-512 ADVANCED STUDY IN THE TEACHING OF LANGUAGE ARTS AND READING. Focuses on teaching reading and language arts skills through children's books, innovative methods, materials and games devised by participants in the course, and curriculum materials and professional texts evaluated and analyzed. Prerequisites: A language arts course at the undergraduate level taken within the past five years from an accredited institution; also a course in Children's Literature.

ED8-525 CHILDREN'S LITERATURE. This course is designed to broaden teacher's acquaintance with literature suitable for elementary school children and to present effective procedures for fostering a love of good reading. Topics covered will include the classics, current fiction and nonfiction, the Newbury and Caldecott Awards, effective techniques of story-telling, interpretation of verse for children, illustrators of children's books, and sources of display materials.

ED8-535 DEVELOPING INDEPENDENT LEARNING ACTIVITIES IN READING AND LANGUAGE ARTS. This course will investigate the teaching of reading in the elementary school from the standpoint of the other language arts: listening, speaking and writing. Emphasis will be on the developmental process of language arts or communication skills. Materials and teaching strategies will be investigated and students will have the opportunity of sharing creative and innovative practices.

ED8-570 ENRICHED LANGUAGE ARTS IN ELEMENTARY SCHOOL. This course is planned for teachers in the elementary school (K-6) to develop materials and methods that will enrich the teaching of language arts, areas of prose and poetry writing, creative dramatics, choral reading and speaking as well as modern approaches to the teaching of grammar, spelling and vocabulary development.

ED9-516 TEACHING LANGUAGE AND READING IN THE INNER CITY. This course is designed to help teachers understand and be able to alleviate reading and language problems which many children from inner city environments must cope with. Emphasis will be placed specifically on the difficulties many black children encounter in school in language arts classes. Pre-requisite: A reading course at the undergraduate level taken within the past five years.

ED9-530 INDIVIDUALIZING READING AND LANGUAGE ARTS IN ELEMENTARY SCHOOL. Focus on means of teaching all of the skills children need to be able to master reading and language arts and insure their success in these areas; concentration on teaching reading and language arts skills through children's books; innovative methods, materials and games devised by participants in the course to meet the individual needs of children; curriculum materials and professional texts evaluated and analyzed to cull out effective ideas that can be adopted and implemented for use in elementary classrooms; recommended course for Masters' degree candidates pursuing a concentration in language arts.

ED9-558 STUDENT CENTERED LANGUAGE ARTS. Developmental English Curriculum featuring variety of innovative approaches and assignments for secondary school.

ED9-545 ADVANCED SEMINAR IN CHILDREN'S LITERATURE. The purpose of this course is to acquaint students with outstanding authors and illustrators so that they can familiarize themselves with the artists' works. Additionally current issues and problems in the presentation of children's literature and their implications for teaching will be examined. Criteria for book selection and the most effec-

tive ways of using trade books with children will be discussed. Allied media that will help children to love reading will be other areas examined by participants. This is an elective for language arts majors, and it may be taken by language arts majors who have not had an undergraduate course in children's literature within the past five years of their beginning of their program.

ED9-555 **PSYCHOLOGICAL AND SYMBOLIC FINDINGS IN CHILDREN'S LITERATURE.** This course will consider the symbolic languge found in the various facets of children's literature and its psychological impact on the reader. It is hoped that the student will recognize the similarity of literary themes from all parts of the world and also the fine nuances which distinguish each and become aware of the new and deeper aspects of these themes. Prerequisite: A course in children's literature.

ED9-560 **RESEARCH IN THE TEACHING OF LANGUAGE ARTS AND READING.*** The focus in this course will be on significant research studies that have been done in the areas of language arts and reading. The history and origins of our English language will be explored. Research papers will be prepared by participants in the areas of speaking and listening, vocabulary development, grammar and usage; reading and creative writing. Views and opinions of prominent contemporary writers will be discussed and their implications for teaching considered.
*Terminal course in concentration.

ED9-565 **PRACTICUM: LANGUAGE ARTS & READING.** A two-week workshop for students concentrating in language arts at the Master's degree level for the purpose of giving students the opportunity to apply what they have learned in their major area by working with elementary pupils. Students should be responsible for preparing daily individualized lesson plans, teaching lessons, and attending daily seminars. Prerequisite: Students must have taken all prior courses in the Language Arts sequence or receive the permission of the instructor.

ED9-570 **LAB PRACTIUM IN LANGUAGE ARTS AND READING IN THE ELEMENTARY SCHOOL.*** Language Arts Concentration majors will work, under supervision, for two weeks in an all-day workshop with pupils from the Worcester community (grades 1-6). The numbers of children will be restricted and will depend on how many graduate students are involved in the workshop. Children with language and reading problems will be helped using innovative materials and methods. In lieu of textbooks, teachers will be asked to pay an amount sufficient to cover the cost of the materials which will be used.
*Held during the summer only. Prospective enrollees must see Dr. Barbara Pilion *before* the end of May.

ED9-575 **CREATIVE WRITING FOR PUPILS IN THE ELEMENTARY SCHOOL.** Awareness of what characteristics creative students display; teachers shown helpful ways in which these characteristics can be developed and strengthened in children's writings; teachers led through same steps and exercises pupils will be led through so that their own creative writing abilities can grow; professional books on creative writing written by authorities in the field studied; children's books and other materials designed to stimulate children's own creativity worked with and discussed. Third course in sequence.

ED9-595 **SPECIAL PROBLEMS: ADMINISTRATION AND SUPERVISION OF TEACHER PERSONNEL IN LANGUAGE ARTS AND READING.** Candidates studying for the CAGS in Professional Education with a concentration in Language Arts and Reading, upon the consent of the instructor, will be expected to supervise and evaluate master's degree candidates in language arts who will be working with children in the elementary grades. Teachers accepted for the course will be required to do a paper, test children, evaluate tests, and critique and use new materials in language arts and reading. A final evalution of the program will be required. *Enrollment Limited:* Contact instructor prior to registration.

LEADERSHIP AND EDUCATION ADMINISTRATION

ED8-100 **SCHOOL BUSINESS MANAGEMENT AND ADMINISTRATION.** The study of the interaction between school management services and the total educational organization and its environment. Topics will include educational budgeting and financial planning; state and federal financial reimbursement programs; miscellaneous grant programs; purchasing and supply management; operation and maintenance of plant; personnel management; school transportation administration and food services management. The area of study will be presented in accordance with generally accepted school business management practices and an emphasis will be made on transferring theoretical concepts into viable "real world" administration techniques.

ED9-100 **FOUNDATIONS OF SCHOOL ADMINISTRATION.** Basic introduction to the principles of school administration. Topics include school population and student personnel, the organization and substance of the educational program, personnel of the school system, the physical plant and its facilities, governmental structure for education and intergovernmental relations, internal school organization, financing of education, school business administration, and the administrative process.

ED9-103 **FUNDAMENTALS OF SCHOOL FINANCE.** Considers the financial support and the allocation of resources in public education, and includes such topics as, personnel salaries, capital outlay, developmental expenditures, the budgetary process, supply and demand in educational services and education expenditures as part of national state, and local income.

ED9-105 **PUBLIC SCHOOL ADMINISTRATION.** A historical, philosophical and sociological study of American School Administrator with a major emphasis on the function, duties and responsibilities of the school administrator. A practical investigation into the daily problems, roles, techniques, and evaluations that are required by the administrator.

ED9-108 **SCHOOL SUPERINTENDENCY.** An introductory course in school administration for those professionals whose career goals are ultimately to aspire to central office assignments including the position of Superintendent of Schools. This survey course will study the typical problems associated with the school superintendency including school business affairs, contract negotiations, staff personnel management, school community relationships, legal aspects of school administration, school plant utilization, school committee policies and regulations, school bus transportation and long range planning for school systems. Prerequisite: At least two graduate courses in school administration or consent of the instructor.

ED9-109 **SUPERINTENDENT AND THE SCHOOL BOARD.** An advance course in educational administration which deals with the Superintendents relation to the school board, the formal and informal approach to policy making, rules, regulations and their implementation.

ED9-110 **LAW FOR THE TEACHER.** A basic course in the investigation of the Laws of the Commonwealth of Massachusetts and the laws applicable to Massachusetts School Systems. Application of the historical reference of law to the modern interpretation of school problems such as locker search, drugs, discipline, attendance and related problems of teachers.

ED9-112 **LAW FOR THE ADMINISTRATOR.** An in-depth investigation of specific school laws and how they relate to the administration of a modern school system. Prerequisite: ED9-110

ED9-116 ADMINISTRATIVE CASE STUDIES. Administrative principles and practices emerging from the study of case materials forms basis for class discussion; decision-making functions for the administrator stressed.

ED9-120 HUMAN RELATIONS FOR ADMINISTRATORS. This course examines the processes by which individuals attempt to reconcile their needs with the needs and demands of others. Areas to be explored include relationships with children, with parents, with fellow-teachers, with school board members, and with other school personnel. A case study approach to the problems of interpersonal and intergroup relations will be utilized, Video tapes and recordings will be developed as well as the use of simulation techniques. Participants will be expected to contribute their experiences for group study.

ED9-121 PERSONNEL ADMINISTRATION IN EDUCATION. A basic course in analyzing the need, establishing a screening process, communication patterns, hiring procedures, job descriptions and specifications and job placement. Special emphasis will be concentrated on the personnel process changes due to declining enrollment, stronger teacher unions and open availability of references in records of candidates.

ED9-125 ORGANIZATION AND ADMINISTRATION OF THE OPEN SECONDARY SCHOOL. An examination of the open-environment secondary school, its philosophical basis, physical characteristics, program options, and organizational and administrative requirements. Particular attention will be paid to the planning, staffing, scheduling, and evaluation aspects of organizing such a school. Also examined will be the increased importance of the curriculum leadership and coordination role of the administrator, as well as the problem of supervision and in-service training.

ED9-127 ORGANIZATION AND ADMINISTRATION OF THE ELEMENTARY SCHOOL. The many facets of elementary school administration and organization; the role of the principal as an administrator in the larger setting of present day education stressed; specifically the course will deal with the principal's role in organizing for teaching and learning, administering pupil personnel and special services and integrating school and community life.

ED9-128 THE ELEMENTARY SCHOOL PRINCIPAL FOR THE 1970's. For students concentrating in School Administration; following areas will be explored—the role of the elementary school principal in school-community relations, line and staff relationships, problems of communications, program evaluation, and teacher recruitment; format of course designed to encourage individual involvement through the use of the seminar techniques.

ED9-130 SEMINAR IN ADMINISTRATIVE THEORY. A seminar course exploring selective administrative theory and its application to modern day educational problems.

ED9-135 SEMINAR IN PUBLIC SCHOOL ADMINISTRATIVE LEADERSHIP. (Specialized graduate course.) Explores the most modern trend of educational administration technology. Focuses on an investigation of complex educational problems and potential administrative techniques used to solve educational problems. Format selected to stimulate intense personal discussion on individualized perceptual strategies and functional decision orientated educational leadership. Participants must either be involved in educational administration or be willing to commit their free teaching time to administrative tasks.

ED9-140 CURRICULUM DEVELOPMENT SEMINAR FOR ADMINISTRATORS. A seminar course in curriculum theory, curriculum constructs and curriculum hypothesis; a developmental and comprehensive insight to the newest curriculum patterns and strategies; a diagnostic and prescriptive approach to curriculum content, scheduling and design.

ED9-145 "SEMINAR IN EDUCATIONAL PERSONNEL ADMINISTRATION". Includes a study of the policies and problems associated with the selection, assignment, orientation, in-service programs, evaluations, promotion, and retention of the professional and non-professional staff of a school system. In addition the following subjects will be discussed: job descriptions, communication problems, fringe benefits and psychic rewards, professional negotiations, and Chapter 847—the new certification law.

ED9-150 COLLECTIVE BARGAINING STRATEGIES. A survey course on the basic designs, strategies and mechanisms used in preparing collective bargaining packages, counter proposals and final proposals. Processes used in the overall procedure of bargaining on school related issues. Special attention on techniques to be used before, during and after the process of bargaining sessions in order to acquaint the learner with the best patterns to utilize during collective bargaining sessions.

ED9-155 EVALUATION—ADMINISTRATION STYLE. A survey course in evaluation techniques, new legislation and processes for a total evaluation of the entire educational staff.

ED9-157 EDUCATIONAL SUPERVISION & EVALUATION (SECONDARY). A graduate level course in Educational Supervision designed to develop competency in the supervision & evaluation of secondary teachers. The course will investigate the status of teacher evaluations as reported in literature; teachers evaluation as represented in union contracts; & the union viewpoint on evaluation, promotion, tenure, & seniority. Students will develop a set of evaluative criteria for supervision based on the literature, union contracts, & existing criteria in the schools.

ED9-158 SECONDARY SCHOOL ADMINISTRATION. The role of the principal and assistant principal in the administration of the secondary school will be thoroughly examined. The middle school, the junior high school and the high school will be included in this examination. The utilization of personnel, buildings, equipment and instructional materials will be emphasized. The relationship of the secondary schools to one another and to other units in the school system will be developed.

ED9-160 CHAPTER 766 ITS' IMPLICATIONS FOR SCHOOL ADMINISTRATORS. The overall changes, administrative service and instruction that Chapter 766 brings to the public and private special schools in the Commonwealth; focus on the preparation of the master plan submitted to the State Department—its design and implementation of the core evaluation teams and its' members dealing with parents concerning Chapter 766 with the administrative procedures to set up collaboratives to deal with the needs in rural areas; or in areas where small populations exist, and to explore the responsibilities of administrators dealing with all styles of special needs, dealing with discipline, learning, incorrigible youth, dropouts, phobics, and the creation of alternative programs to meet the expanding needs of children who cannot be programmed within the public schools-; selected experts brought in to support specific areas and assist the participants in setting up alternatives as well as the design for federal funds and collaboratives.

ED9-162 ADMINISTRATION OF PROGRAMS FOR CHILDREN WITH SPECIAL NEEDS. Because of recent legislation in Massachusetts, school systems have become deeply involved with programs for children with special needs. This course will examine the implications of the legislation for administrators who are responsible for implementing these programs. The course is designed to apply to both elementary and secondary education administration. Alternative methods of implementation of programs, staffing and funding will be explored.

ED9-165 **INTELLECTUAL FOUNDATIONS OF AMERICAN EDUCATION.** This course will stress the foundations of American education, primarily in the Twentieth Century. The roots of the American Educational Dilemma will be explored through classroom discussion, current readings and analyses of the various educational protests to the existing educational system.

ED9-170 **SCHOOL PLANT AND DEVELOPMENT.** A practical investigation of the planning developing and implementing of renovative, or construction of new school facilities, Topics evaluating public relations and the community, hiring of architect warrents and bonds, building and developing facilities.

ED9-172 **GRANTSMANSHIP FOR THE TEACHERS & ADMINISTRATOR.** A basic course for beginning grantsman; designed to show the beginner how to construct a grant; experts from the various government and private agencies will inform the participants on the technical aspects of grantsmanship.

ED9-174 **ADMINISTRATION OF A VOCATIONAL TECHNICAL SCHOOL.** A comparison of the styles and techniques used in a Vocational-Technical School and its relationship to the administration of the traditional or comprehensive high school.

ED9-175 **VOCATIONAL EDUCATION AND THE SUPERINTENDENT.** A basic course in educational administration that highlights the special role and duties of a superintendent of a vocational education school. The course offers a comparison of the responsibilities of a vocational education to that of a traditional superintendent of schools. The course will also discuss and define the techniques, methods, and tools used by the chief executive.

ED9-177 **SEMINAR: SCIENCE SUPERVISION.** Sponsored by the Massachusetts Association of Science Supervisors. The course uses a problem-solving approach to examine the needs and responsibilities of today's Science Supervisor. It will involve teachers and supervisors in a practical approach to such aspects as safety, use of resources, evaluation of new curricula, department budgets, professional organization, etc. Class sessions will be conducted by recognized experts in the problem area under discussion.

ED9-180 **MANAGEMENT SYSTEMS FOR EDUCATIONAL ADMINISTRATION.** A practical investigation of the role of the educational administrator as a manager. A comparison of the superintendent and principal as a relevant part of a management system. A probe of the relationship of leadership, management systems and basic management organization as they relate to the school system.

ED9-185 **SEMINAR IN ADVANCED PUBLIC SCHOOL ADMINISTRATION.** A specialized course designed for the advanced educational administrative student. The course will explore advanced theoretical and practical solutions to advance administrative methodology.

ED9-190 **SPECIAL PROBLEMS IN SCHOOL ADMINISTRATION.** A practicum experience designed around a special problem in administration of a school system.

ED9-192 **ADVANCED EDUCATIONAL RESEARCH AND DESIGN.** This course is to provide the necessary skills so that C.A.G.S. students will be able to design and carry out a scholarly Action Research Project. It will emphasize proper educational research design, hypothesis formation and evaluation, the creation and use of educational research instruments, the use of the computer in reporting results, and proper methodology in reporting recommendations and implications of the project.

ED9-195 **ACTION RESEARCH PROJECT I.** Students will enroll for two (2) consecutive semesters for this course. During the two semesters, students will meet both in large groups and individually in developing their Action Research Projects.

ED9-196 **ACTION RESEARCH PROJECT II.** Second semester of required two (2) semester consecutive course. Enrollment in both semesters is mandatory. During the two semesters, students will meet both in large groups and individually in developing their Action Research Projects.

LIBRARY SCIENCE/MEDIA (see MEDIA)

MATHEMATICS

MA8-002 **PATTERNS OF PROBLEM SOLVING.** This course will attempt to cross boundary lines between discipline and traditional fields of endeavor. It will try to provide a foundation for attitudes and skills productive in dealing with complex problems from a statement of the problem to its creative solution. Topics will include problem solving, language and communication, fundamental concepts of the computer, probability and the will to doubt, models and modeling and decision making models.

MA8-003 **SPEED ARITHMETIC.** This course is designed to provide speed and accuracy and to produce a greater interest in arithmetic for non-math majors.

MA8-004 **THE METRIC SYSTEM OF MEASUREMENT.** This course is intended to increase the student's knowledge of the metric system of measurement. It will study the metric system of measurement as it is applied to every-day living and the sciences.

MA8-100 **CALCULUS AND THE COMPUTER.** Using the BASIC language, the computer will serve to illuminate and demonstrate simple application of some of the fundamental concepts of calculus. Topics include Functions, Limits, Derivatives, Root Finding, Integration, Differential Equations, Sequences and Series, Miscellaneous Problems. Prerequisite: Calculus sequence. 1 credit.

MA8-120 **BASIC CONSUMER MATHEMATICS/MATHEMATICS OF FINANCE.** Topics include consumer loans, short-term installment buying, simple and compound interest, ration, proportion and percent, mark-up and mark-down, depreciation and taxes, bank reconciliation, profit, commission, discount, real estate taxes, mortgages, stocks and bonds—AS TIME PERMITS. Prerequisite: Arithmetic. 1 credit.

MA8-200 **TOPICS IN GEOMETRY.** Alternate approaches to Euclidean Geometry, including analytic methods, vector methods, isometries, and homtheties. Prerequisite: Modern Mathematics I or equivalent.

MA8-210 **EUCLIDEAN & NON-EUCLIDEAN GEOMETRY.** Axiomatic geometry with emphasis on Euclidean Geometry; nonEuclidean geometrics, principle of duality; Desargues', Pascal's and Breinchon's theorems; harmonic sets and divisions, cross ration and others. 3 credits.

MA8-220 **PROJECTIVE GEOMETRY.** Axipatic development of Projective Geometry including cross ratio, harmonic setts, theorems of Desargues' pappas'. Pascal, and Brianchon, also Analytic Projective Geometry and Projective Transformations. 3 credits.

MA8-230 **MODERN MATHEMATICS FOR SECONDARY SCHOOL TEACHERS.** This course is intended to provide the teacher of secondary school mathematics with mathematical concepts which will help him/her to convey the nature and spirit of mathematics from the current point of view. The course will include such topics and functions and graphs (includes trigonometric, logarithmic, exponential, inverse trigonometric, and hyperbolic functions), limits continuity, etc. Prerequisite: First Year Calculus.

MA8-250 NUMBER SYSTEMS. Development of the systems of integers, rational numbers, real numbers and complex numbers, beginning with Peano's axioms for the system of natural numbers. Prerequisite: none.

MA8-301 LINEAR ALGEBRA. Fundamental concepts of systems of linear equations, matrices, vector spaces, linear transformations, determinants, inner products, eigen-values and eigenvectors. Prerequisite: Modern Mathematics or equivalent.

MA8-310 CALCULUS III. This course will study such mathematical areas as polar coordinates, elementary vector analysis, solid analytical geometry, and partial differentiation along with many applications. The main emphasis will be on technique rather than on a careful study of the foundations underlying these techniques.

MA8-311 CALCULUS IV. A continuation of Calculus III. A completion of partial differentiation followed by a study of volumes through the methods of multiple integration. Infinite series and elementary topics in complex analysis will also be considered. Prerequisite: Calculus III or equivalent.

MA8-380 PROBABILITY. Probability, combinatorial methods, random variables, probability functions, moments, moment generating functions, Central Limit Theorem, sampling. Prerequisite: Calculus IV or equivalent.

MA8-390 STATISTICS. Decision theory, estimation, hypothesis testing, regression and correlation, analysis of variance. Prerequisite: Probability or equivalent.

MA8-400 NUMBER THEORY. Includes divisibility, primes, congruence, primitive roots, and quadratic residues. Prerequisite: Modern Mathematics or equivalent.

MA8-500 STATISTICAL TECHNIQUES FOR BUSINESS, LIBERAL ARTS, NURSING AND THE SCIENCES. Statistical methods and decision methods as they are applied to data. Topics will include testing of hypotheses, sampling, nonparametric methods, regression, correlation, analysis of variance, time series, etc. Computer programming or computing devices and techniques may be used.

MA8-568 SPECIAL PROBLEMS IN MATH. Presents an opportunity to study some topics in mathematics not usually covered in formal course work, or, to prepare students to do independent work in their field of interest, or, to examine an individually motivated problem under the guidance and supervision of a faculty member. Prerequisite: Permission of instructor.

MA8-600 ORDINARY DIFFERENTIAL EQUATIONS. Techniques, numerical procedures, existence, uniqueness and properties of solutions of ordinary differential equations. Prerequisite: Calculus sequence.

MA9-100 ANALYSIS I. Topics including elementary topology, continuity, differentiation, integration, infinite series, as well as other topics as time permits. Prerequisite: Calculus sequence.

MA9-101 ANALYSIS II. A continuation of Analysis I. Topics to be covered will include: Theorems of Green, Stokes and Gauss, Infinite series, Lebesque intergration and other topics as time may allow. Prerequisite: Analysis I.

MA9-200 VECTOR AND TENSOR ANALYSIS. Vector algebra, differential and integral calculus of vectors with applications; curvilinear coordinates, reciprocal sets of vectors, contravariant and covariant vectors; 3 credits.

MA9-300 INTEGRAL EQUATIONS. Linear integral equations of the first and second kind are studied along with some existence theorems, approximate solutions and applications. 3 credits.

MA9-310 PARTIAL DIFFERENTIAL EQUATIONS. Classification of partial differential equations: the theory of first order linear partial differential equations with constant coefficients; existence, and uniqueness theorems with mixed boundary value problems. 3 credits.

MA9-320 NUMERICAL ANALYSIS OF DIFFERENTIAL EQUATIONS. Finite difference approximations applied to differential equations including the study of stability and convergence. Relaxation, gradient, and characteristics methods will also be studied. 3 credits.

MA9-400 ABSTRACT ALGEBRA. Elementary properties of groups, rings, integral domains and fields. Groups through Sylow Theory and (1) Field Theory through Galois Theory of (2) Ring Theory through Primary Decomposition or (3) Linear Algebra through Jordan Cononical forms.

MA9-500 COMPLEX VARIABLES. Function theory through differentiation, integration, Taylor and Laurent series and conformal mapping. Prerequisite: Calculus IV or equivalent.

MA9-600 TOPOLOGY. Basic topological concepts motivated by metric spaces are considered. The related properties of the separation axioms and compactness are investigated through the use of filters. If time permits, connectedness will be discussed.

MA9-700 BASIC CATEGORY THEORY. An introduction to the standard concepts of category theory-functors, natural transformations, universality, limits, colimits, adjoints and triples. 3 credits.

MA9-710 RING THEORY. Basic results in Noetherian Rings and Dedekind Domains. 3 credits.

MA9-720 FIELD THEORY. Basis concepts through Galois Theory including Algebraic and transcendental extensions and separability. 3 credits.

MA9-730 FOURIER ANALYSIS. Fourier Series, Integrals, and transforms with applications. 3 credits.

MA8-700 HISTORY OF MATHEMATICS. This course is designed to explore the evolution of fundamental mathematical concepts starting ca 2000 B.C., the creators of mathematics, a partial list of problems which motivated new discoveries and relationships with other sciences and humanities.

MEDIA

ME8-245 DESIGN AND PREPARATION OF INSTRUCTIONAL MATERIALS (formerly ME8-145). This course is designed to enrich the participants instructional performance by developing techniques of visual presentation of subject materials. Pictorial presentation of instructional materials through non-artistic skills will be developed. The techniques apply at all levels of instruction, but the subject matter will be related to the specific interest of each participant. Limited to 20 students.

ME8-246 DESIGN AND PREPARATION OF INSTRUCTIONAL MATERIALS II. An advanced course in the preparation of graphic materials for display and instruction. Areas to be covered will include; varied display materials, visual design, air brush, preparation of materials for offset, transparency production (diazo) and high contrast photography. Prerequisite: Preparation of Inexpensive Instructional Media or consent of instructor. A materials fee will be assessed.

ME8-250 PHOTOGRAPHY I (formerly ME8-270). A study of the methods of photographic communication. Instruction includes the craft of camera handling, black/white film processing and printing, theory of film emulsions and exposure, camera systems and optics. An emphasis is placed upon the production of images as a means by which the student learns to use the tools and materials of B/W photography. Through discussions and critiques, the student increases his/her ability to make clear visual statements. Seminars will be conducted in contemporary photographic communication. No prerequisite. Adjustable camera required. Limited to 20 students. $10 laboratory fee. Not open to students who have completed ME 150, INTRODUCTION TO PHOTOGRAPHY.

ME8-252 **PHOTOGRAPHIC COMMUNICATION: THE ESSAY.** A study of the photographic essay as a form of visual communication. Instruction includes the history of the photographic essay. Methods of production, categories of essays, and image-word relationship and editing. The emphasis is placed upon the production of the photographic essay as a means to learning methods of production and content development. Critiques will assist the student in the development of visual thinking. Prerequisites: ME 150 (Introduction to Photography) or ME8-250 (Photography I); ME 250 (Advanced Photography) or ME8-275 (Advanced Methods in Photography). Not open to students who have completed ME 252 (The Photographic Essay). Cameras are required. Limited to 20. A lab fee of $10.00 will be charged.

ME8-253 **PHOTOGRAPHY II.** Photography II is a study of elements of composition in photographic communication. The elements of visual language will be discussed and experienced through assignments that require the integration of the elements in imagery. Instruction will be through lectures, illustrations, laboratory sessions. Photographic assignments will provide the student with experiences in defining, using, and producing imagery exemplifying relationships of figure to ground and law of visual perception. Prerequisite: PHOTOGRAPHY I

ME8-255 **ADVANCED METHODS IN PHOTOGRAPHY.** A study of the methods of existing light photography, print contrast control, composition and the formation of negative density. Instruction includes elements of the Zone System, comparison of film developers, and their relationship to image accutance and resolution, methods in print contrast control, and image composition as a function of patterns in tonal contrasts. Critiques will assist the student in the development of a critical vision and developing ability to communicate visually. Prerequistites: Introduction to Photography or Photography I. Cameras required. Limited to 20 students. $10 laboratory fee. Not open to students who have completed Advanced Photography I

ME8-256 **COLOR PHOTOGRAPHY I.** This course teaches the use of color transparency film and 1993 color positive printing procedures. Instruction will include color composition, color saturation, color balance, E-4 (modified) processing, camera filtration, 1993 printing procedures and color printing filtration with gel filters. Students will purchase their own film, printing paper and camera filters. It is recommended that students purchase a set of color printing gel filters. Limited to 12 students. Open to students who have completed 6 semesters of photographic education, or who have advanced photographic standing and the instructor's written permission.

ME8-257 **SUPER 8 FILM PRODUCTION I (formerly ME8-157, CINEMATOGRAPHIC TECHNIQUES).** The student completing this course successfully will be able to demonstrate a verifiable understanding of and a basic competence in the theory and techniques of visualization required in the production of motion pictures using the super 8 mm. format. Emphasis will be placed on laboratory work in order to develop familiarity with pictorial organization and equipment use. Cameras will be supplied by the college but students must furnish their own film and processing. Limited to 20 students.

ME8-265 **AUDIO PROGRAM PRODUCTION.** Principles and techniques of producing sound programs. Includes scripting, vocal talent casting and directing, and electronic modification of program material. Laboratory experience in production. Limited to 16 students.

ME8-360 **TELEVISION PRODUCTION I.** Provides the student with background and practice in the techniques of producing color television under studio conditions. Attention is paid to audio aspects, lighting, staging, directing, and equipment operation. Not open to students who have completed (Producing & Directing the Television Program). Limited to 16 students.

ME8-365 **TELEVISION PRODUCTION II (formerly ME8-260; ADVANCED TV PRODUCTION).** This course is designed to build upon and amplify those experiences gained in the introductory course. The student will gain experience in the areas of electronic video tape editing, technology of television engineering, creative video, remote production and other advanced techniques not covered in the introductory course. Primary emphasis of the course is on the production of lengthy programs utilizing the advanced techniques. Prerequisite: PRODUCING AND DIRECTING THE TELEVISION PROGRAM or permission of the instructor.

ME8-400 **INSTRUCTIONAL TECHNOLOGY: NATURE AND USE.** Provides situations for studying, evaluating, and designing techniques in the use of instructional media. Opportunities for developing skills in the operation and utilization of equipment and systems which facilitate communication in both formal and informal learning transactions. Not open to students who have completed ME 140 (Utilization of Instructional Materials) or ME8-140 (Utilization of Instructional Media). Limited to 25 students.

ME8-435 **ADMINISTERING INSTRUCTIONAL NON-PRINT MEDIA SERVICES (formerly ME8-402, ADMINISTRATION OF AUDIOVISUAL SERVICES).** The student completing this course successfully will be able to demonstrate a verifiable understanding of the principles and practices required to organize and administer production, utilization, and distribution services of non-print media in a unified media program at both the building and district level. Limited to 24 students.

ME8-500 **REFERENCE SOURCES AND SERVICES IN THE SCHOOL LIBRARY/MEDIA CENTER.** The provision of an excellent collection of reference sources and services to students K-12 is the objective. Includes practical problems and research into a subject area of bibliography of interest to school library/media specialists. This course will satisfy, in part, the requirements of the public school librarian's certificate.

ME8-605 **STORYTELLING FOR LIBRARIANS.** A course intended for children's librarians, school librarians interested in learning or improving their techniques in relating narrative poetry and prose to children. The course stresses vocal variety, interpretation approaches and methods, gestures, handling of presentation media, and introductory and follow-up techniques. Practice in making class and laboratory presentation will be included. Limited to twenty-five students, undergraduate or graduate.

ME8-640 **CATALOGING FOR A LEARNING RESOURCES CENTER.** The goal of this course is to develop the technical service competencies required to procure and organize materials for a school learning resources center. Through laboratory exercises, students will apply principles of cataloging and classification using the ALA ANGLO-AMERICAN CATALOGING RULES, the AECT STANDARD FOR CATALOGING NONPRINT MATERIALS, the DEWEY DECIMAL CLASSIFICATION, and the SEAR'S LIST OF SUBJECT HEADINGS. Not open to student who have completed ME315 (Cataloging and Organizing Learning Materials).

ME8-650 **SELECTION OF LIBRARY MATERIALS.** Course intended for persons interested in library associate positions, public librarians, and academic librarians who wish to learn or improve their understanding of the evaluation, selection, and acquisition of broad categories of library materials. Open to both undergraduate and graduate students.

ME8-652 SELECTING AND EVALUATING ELEMENTARY SCHOOL LEARNING RESOURCES (formerly ME8-600, LEARNING RESOURCES FOR CHILDREN). Establishes criteria for evaluating and selecting print and non-print materials for the elementary school library; the use and limitations of standard selection aids and review media; special problems associated with censorship, materials requiring audio-visual production, acquisitions and procedures, and weeding. This course is designed for graduate students and qualified undergraduates. Not open to students who have taken LEARNING RESOURCES FOR CHILDREN.

ME8-653 SELECTION OF LEARNING RESOURCES FOR YOUNG ADULTS (formerly ME8-153). Designed to provide teachers and librarians with a knowledge of the fundamental principles in evaluating and selecting books and related materials for students in junior and senior high schools; handling controversial materials problems; sources for non-book materials; relating selection practice to the educational program of a modern secondary school. The course will satisfy, in part, the requirements of the public school librarian's certificate. Not open to students who have taken LEARNING RESOURCES FOR CHILDREN. Prerequisite: None

ME8-700 ADMINISTERING THE SCHOOL LIBRARY/MEDIA CENTER (formerly ME8-900). Planning and operating a library/media center within a school. Emphasis on the provision of a unified media program of book and non-book materials and their accompanying technology. Includes budgeting, physical plant, personnel, and equipment. Students research a problem for purposes of decision-making. Not open to students who have taken ADMINISTRATION OF THE SCHOOL LEARNING RESOURCES CENTER. Prerequisites: ME8-652 or ME8-653, ME8-500, ME8-640 or equivalent.

ME9-100 COMMUNICATION MEDIA. Intended to provide an integrating framework to assist the student in developing a meaningful understanding of the relationships between the various concepts and divisions in the field. Includes reading and summarizing reports from the research literature. Limited to 24 students.

ME9-250 EDUCATIONAL TECHNOLOGY IN THE DESIGN OF INSTRUCTIONAL SYSTEMS. A systems approach to the use of media in the teaching-learning process, this course focuses on the problems of individualizing instruction, defining learning objectives, and incorporating appropriate media in the solution of educational problems.

ME9-300 THEORIES OF COMMUNICATION. A survey of research and theory on the processes of personal and group communication, particularly as applied to the teaching-learning encounter. Emphasis will be placed on perception, meaning, information, opinion formation and changes, and the role of communication in a modern technological society as an agent for conservation and change. Prerequisite: ME9-100 (COMMUNICATION MEDIA)

ME9-660 ADVANCED CATALOGING AND CLASSIFICATION. This course will deal with the principles and problems involved in cataloging and organizing each format represented in media collections. Cataloging codes and classification schemes will be compared, applied and evaluated in preparation for a survey and evaluation of the available commercial cataloging services. Limited to 24 students. Prerequisite: ME8-640 or consent of instructor.

ME9-675 THE GENERIC LIBRARY IN THE COMMUNICATION PROCESS. Centers on consideration of the library as a basic function in the communication process in literate society from the book collection in the home to the memory bank in a third generation digital computer. Emphasizes identification of characteristics of the generic library as it appears in a variety of common situation including businesses, factories, and the entertainment field.

ME9-680 MODERN BOOK PUBLISHING. Covers present day publishing techniques and distributing practices in the book industry with a survey of the historial background from which the techniques and practices grew. Includes a view of the financial aspects of the publishing field and of some non-book publishing and distributing practices of interest to librarians and media specialists.

ME9-700 BIBLIOGRAPHIC DATA PROCESSING. Provides the background needed by the modern librarian who must deal with the planning and implementation of automated library systems. Includes evaluations of acquisition and ordering, catalog production, circulation control, interlibrary loan, information retrieval systems involving the use of electronic computers. Open to students in library science/media concentration or with consent of the instructor.

ME9-710 LIBRARY NETWORKS AND TELEPROCESSING.

ME9-790 INTRODUCTION MEDICAL LIBRARIANSHIP. An introduction to the literature of medicine, dentistry, pharmacy, nursing, and public health. Course will include discussion on acquisitions, organization of materials, and the administration of a variety of medical libraries.

ME9-800 THE REFERENCE PROCESS: A SEMINAR. Case studies of problems in reference service will form the basis for discussion of how the process should and does operate. Includes consideration of theory and ethical aspects. Prerequisite: A basic reference sources and methods course.

ME9-850 SEMINAR: THE TEACHING ROLE OF THE LIBRARIAN/MEDIA SPECIALIST. Students will draw on basic theory learned in earlier courses to assess the teaching role of the librarian/media specialist in the areas of school media programs, media skills, and instructional design. Students will be required to design a unit of instruction to simulate the media specialist's role in curriculum implementation. Optimally, the seminar will be taken at the same time or immediately after the practicum. Prerequisite: Advanced standing in the Concentration area.

ME9-900 SCHOOL LIBRARY/MEDIA CENTER PRACTICUM (replaces FIELD EXPERIENCE IN MEDIA). The knowledge and skills developed in the classroom and laboratory will be assayed in practical work in a school library/media center for a total of 90 clock hours. This experiential component will be guided by a certified librarian/media specialist. The student will be required to record and assess his/her initiatives in participating in all available activities. Not open to students having taken the undergraduate course ME-630, FIELD EXPERIENCE IN MEDIA. Prerequisite: Advanced standing in the concentration in school library science/media.

ME9-910 MEDIA INTERNSHIP. This course offers the advanced student the opportunity to practice acquired skills in a "real-life" situation in a cooperating institution under the supervision of a qualified media specialist. Prerequisite: Advanced standing in the concentration and demonstrated competence in the appropriate area.

NATURAL SCIENCE & PHYSICS

NS8-110 ASTRONOMY IN THE SPACE AGE. Through lectures, discussions, and demonstrations students become familiar with the solar system, planetary and stellar motions, the physical characteristics of stars, the galaxies, our calendar, astronomical time and calculations, cosmogony, and space travel speculations.

NS8-115 ELEMENTARY SPACE SCIENCE. This course will make a study of the physical science that makes possible man's travel into space. It will consider relevant topics from Astronomy, Geology, Physic, Chemistry & Biology as the composition of the earth, the physical laws of space, rocket propulsion, space navigation and

human survival. Although this course is structured primarily for teachers in the elementary grades, registration is open to others with the consent of the instructor.

NS8-125 **MAN'S ENVIRONMENT: THE OCEANS.** This course offers an elementary presentation of oceanology with consideration given to the environmental problems faced by man and his technology as he studies the ocean environment. Topics considered are: the geography of the sea, physical and chemical properties, the ocean environment, the dynamic integration of land, sea, and air, and the contaminated ocean.

NS8-300 **COMPUTER APPLICATIONS FOR NATURAL SCIENCE.** Survey of useful computer problems including large data base management simulation techniques and principles of modern operating systems as needed in the engineering and applied world.

NS8-400 **PHYSICAL SCIENCE METHODS AND TECHNIQUES.** This course, which is directed primarily toward the needs of the in-service or prospective classroom teacher, considers many of the basic procedures and techniques associated with the teaching of science. The course will offer not only essential fundamental background material in science but will also provide insight concerning the science concepts and techniques found in many of the "new" school science programs with which a teacher should be familiar. Open to anyone desirous of obtaining a better background in the many areas of physical science.

NS8-450 **ELECTRONIC MEASUREMENTS.** A laboratory course in electrical and electronic measurements and instrumentation with theory of electron emission, electron tubes, and solid state devices as needed.

NS8-500 **WORKSHOP IN AVIATION/AEROSPACE SCIENCE.** This workshop is designed primarily for teachers who their knowledge and awareness of the interdisciplinary aspects & technology. Instruction will be based upon the direct application of mathematics, earth science, biology, sociology, and other disciplines, the fields of meteriorology, navigation, communications & space & will direct laboratory experiences which are designed to instruct topics ranging from the science of flight to rocket fundamentals. The workshop is offered by the Massachusetts Association of cooperation with Worcester State College, & with the support of the Aviation Education Association, The Civil Air Patrol, the Federal Administration, & the National Aerospace Education Association. Application and registration only through the Mass. Association of Teachers, P.O. Box 87, West Side Station, Worcester, Mass. 01602. (Summers only)

NS8-852 **MODERN TOPICS IN ENVIRONMENTAL SCIENCE.** This course stresses the interdisciplinary nature of physical law as applied to the analysis of man's physical environment. Topics to be considered include air and water pollution; weather modification; environmental management and protection; and environmental studies in the schools.

NS8-879 **PROCESS OF SCIENCE WORKSHOP.** A laboratory approach to the study of science as drawn from the fields of physics, chemistry, and earth science. Participants will acquire competence in the processes of science by using the processes in science experiences, and as they behave as scientists will learn science. Because simple physical systems are relatively easy to investigate, the course will emphasize the study of physics; chemical and earth sciences content will build upon these topics in a sequential manner. The workshop is designed to upgrade the science background of elementary school teachers in an in-service atmosphere, so that positive reinforcement of subject matter is achieved by concurrently using the materials in their classrooms.

NS9-100 **WORKSHOP IN EARTH SCIENCE: PATTERNS IN OUR ENVIRONMENT.** Focus on the new Prentice-Hall course "Earth Science: Patterns in our Environment", an inquiry-oriented, multi-text approach to the concepts and human issues of earth science today. Participants will become acquainted with the course philosophy, basic subject matter, experiments and teaching strategies, and means of adapting the course to individual needs. Workshop offered by the Massachusetts Association of Science Teachers in cooperation with Worcester State College. Application and registration ONLY THROUGH MASS. ASSOCIATION OF SCIENCE TEACHERS, P. O. BOX 87, WEST SIDE STATION, WORCESTER, MASS. 01602. CONTACT M.A.S.T. DIRECTLY.

PY7-106 **PHYSICS FOR LIBERAL ARTS STUDENTS II.** A qualitative approach to the fundamental notions of modern physics such as electromagnetic radiation, field theory, atomic spectra and relativity; emphasis on the students own experiences and the development of a better understanding of man's physical environment.

PY7-115 **GENERAL PHYSICS.** The mechanics of fluids and solids, properties of matter, and heat energy; three lectures and one two-hour laboratory per week.

PSYCHOLOGY

PS8-001 **IMPROVING YOUR MEMORY.** There will be a brief description of memory as a psychological function. The workshop approach will be utilized aimed at increasing remembering through use of visual imagery, associations, mnemonic devices, etc.

PS8-002 **PSYCHOLOGICAL COUNSELING: CASE STUDIES OF MARRIED ADULTS.** Actual case studies of married adults in need of psychological counseling are presented. Methods, procedures, and techniques used in the counseling process are examined and studied.

PS8-003 **PSYCHOLOGY OF LOVING (AND LIKING).** Since humanity devotes a substantial portion of its time to discovering, playing, worrying and suffering through loving and liking, an attempt will be made to explore this area of interpersonal attraction. Since these emotions also constitute a topic of scientific inquiry as well as leisure time activities, an exploration of such topics as self, maternal, brotherly, erotic and non-sexual love will be examined.

PS8-200 **A WORKSHOP IN PSYCHOLOGICAL STATISTICS AND PSYCHOLOGICAL TESTING.** This workshop is a practical study in Psychological Statistics particularly as it is applied to Psychological Testing. Credit may be used toward certification and/or degree work in Psychology.

PS8-300 **HUMAN GROWTH AND DEVELOPMENT.** This course has been designed to allow investigation of human development by observing man's progression through life with respect to the processes of human growth. Human development will be examined through the processes of Growth, Organization, Sexuality, Learning, Creativity, Stabilization, and Evolution. The processes will be observed as they relate to and influence performance as nurses. After familiarization with the functioning of the processes, the student will be expected to offer a class presentation describing his/her relationships with and the behaviors of patients and how these processes are influencing the student in his/her profession. By the end of the course, it is expected that each student will: have a basic understanding of some of the traditional psychological principles of human development; have gained an understanding of the processes at work throughout the life cycle; have bridged the gap between theory and practice by being able to observe and apply the principles and processes in his/her profession.

PS8-420 **CLINICAL PSYCHOLOGY.** The history and current status of clinical psychology will be explored. Psychodiagnostic methods, such as projective techniques, intelligence tests, and the interview will be examined with special reference to dynamics of assessment in relation to understanding and helping the patient. The major schools of psychotherapy will be presented and discussed. Case studies and clinical reports will be utilized in understanding assessment and treatment procedures.

PS8-625 **BEHAVIOR MODIFICATION IN THE SCHOOLS.** The application of behavior modification techniques to the problems of school children, to a wide range of behavior disorders; assessment of results.

PS8-630 **PRINCIPLES OF BEHAVIOR.** Introduction to the history, basic concepts and techniques of behavior modification; methods of objective observation, empirical and theoretical foundations of behavior modification techniques.

PS8-640 **PSYCHOLOGY OF LEARNING.** A course in the basic operations of learning. Topics covered include reinforcement, discrimination, and generalization and punishment. The application of operant conditioning to education and human engineering will be discussed.

PS8-650 **PSYCHOLOGY OF ADJUSTMENT.** The examination of mental health and personality in the person. The values and adjustive behavior in the establishment of values will be scrutinized. The course will have an experiential emphasis and the techniques of role-playing and psychodrama will be utilized in the application of viability of theory.

PS8-660 **ADVANCED ABNORMAL PSYCHOLOGY.** The etiology, dynamics and treatment of psychopathology and its relationship to normal personality; contemporary approaches as well as traditional categories of psychopathology. Prerequisites: General Psychology I and II

PS8-780 **DYNAMICS AND ETIOLOGY OF THE EMOTIONALLY DISTURBED CHILD.** The etiology, dynamics and treatment of psychopathology and its relationship to emotionally disturbed children. Theory and research on behavior disorders of children will be carefully examined. Great emphasis will be placed on the investigation of the causes of juvenile deliquency, neurotic behavior, psychotic behavior and minimal brain disfunction; condition of children as evaluated from a variety of opinions. Clinical visitation and observation will be required. Prerequisites: Gen'l. Psych I & II

PS8-790 **SPECIAL CLASS METHODS.** The development of experiences which provide optimum conditions of growth for the mentally retarded child; the mental equipment of the individual children, different degrees of retardation and their causes, and disorders of behavior which frequently are concomitant; types of curricula and organization of methods considered; language arts, quantitative thinking, and evaluative techniques; this course meets the requirements toward State Certification to teach in a Special Class.

PS8-900 **CONTEMPORARY PROBLEMS & ISSUES IN INDUSTRIAL PSYCHOLOGY.** The prime objective of this course will be to focus on the psychological implications and seek solutions to the problems that have evolved from the recent advances of business and industry in the areas of science, law and economics. Selected areas of concern will emphasize problems involved in objective test validation techniques of job performances, motivation of job training and retraining and retirement, the role of women in industry, and the problems inherent in national and international relocation. Resource people will include personnel directors and local business executives.

PS8-910 **INTRODUCTION TO CLINICAL AND COUNSELING PSYCHOLOGY.** A survey of theories, methods, and techniques used in the clinical and counseling processes.

PS9-100 **ISSUES IN SCHOOL PSYCHOLOGY.** This course is for prospective School Psychologists in the elementary and secondary schools of the Commonwealth. Emphasis will be placed on the new Law #766, now in effect, dealing with children that have special needs. Issues will include: core evaluations and the School Psychologist's responsibility; records kept and filed by the Psychologist (SPED 8-9-10); legal responsibility of the Psychologist; and the Special Areas of testing and evaluating required of the School Psychologist under Law #766.

PS9-150 **PSYCHODIAGNOSTIC TECHNIQUES.** Survey of psychodiagnostic techniques, instruments and methods employed in evaluating and diagnosing psychological factors. Theoretical issues in psychodiagnosis also discussed.

PS9-410 **PSYCHOLOGY OF EXCEPTIONAL CHILDREN.** The psychology and treatment of children having superior or inferior intellectual ability, defective vision, hearing, speech, and other physical handicaps; the mental equipment of individual children, different degrees of retardation and their causes, and disorders of behavior which frequently are concomitant: the home, school, and community are considered in relation to the child's mental health. The psychological basis of suitable curriculum for mentally retarded children is evaluated.

PS9-495 **THE ILLINOIS TEST OF PSYCHOLINGUISTIC ABILITIES.** This course examines the rationale, administration, and interpretation of the Illinois Test of Psycholinguistic Abilities.

PS9-605 **PSYCHO-EDUCATIONAL PRESCRIPTIONS.** Techniques of psycho-educational assessment; supervised practice in psychological and educational assessment in the elementary and secondary schools resulting in the development of psychological and/or educational prescription. Prerequisite: A minimum of 15 credits in the graduate school

PS9-750 **ADVANCED THEORIES OF PERSONALITY.** This course will focus on the psychoanalytic, behavior, and existential theories of personality. Additional theories of less significance will include Fromm, Adler, Horney and Sullivan. Careful consideration will be given to the problem of Eclecticism as it lends itself to an understanding of the dynamics of personality.

PS9-785 **PSYCHOLOGY OF SUBNORMAL AND UNADJUSTED CHILDREN.** A study of the psychological and educational factors involved in classification, diagnosis and counseling of the retarded. Various approaches to the treatment of subnormal and unadjusted children in relation to the family, to the school, and to the community will be examined. Latest research and studies on the psychological bases of suitable curriculum for mentally retarded children will be reviewed and evaluated. Clinical visitation will also be part of the course. This course may be used toward the Massachusetts Certification of a Teacher of Special Education and Public School Psychologist. Prerequisites: one year of general psychology, abnormal psychology.

PS9-890 **PRACTICUM IN SCHOOL PSYCHOLOGY I.** This practicum of 300 clock hours will involve students working under the supervision of a practicing certified school psychologist in a K-12 school setting. Students will be involved in the diagnosing of students and in the development of appropriate prescriptions and intervention strategies. A weekly seminar will be included. 6 credits. Prerequisite: Limited to students enrolled in the M.Ed./C.A.G.S. in School Psychology who have completed a minimum of 42 semester hours in the program. Three (3) semester hours of this requirement may be fulfilled by three (3) years of successful experience as a full-time employed and certified professional in a K-12 grade situation.

PS9-895 **PRACTICUM IN SCHOOL PSYCHOLOGY II.** This practicum of 300 clock hours will involve students working until qualified psychological supervision in a school, hospital, and/or clinic. Students will work in diagnosing and evaluating learning and adjustment problems of students and in developing appropriate strategies for the treatment and remediation of such problems. Weekly seminar included. 6 credits. Prerequisite: Practicum in School Psychology I. Three (3) semester hours of this requirement may be fulfilled by three (3) years of paid full-time employment in psychological practice covering evaluation, treatment, and remediation of learning and adjustment difficulties of children between the ages of 3 and 21.

READING

ED8-500 **READING IN THE ELEMENTARY SCHOOL.** Includes an intensive overview of the basic reading skills; effective teaching strategies and utilization of multi-media in reading instruction. Also assesses reading growth and provision for a wide range of reading abilities in the classroom.

ED8-510 **INSTITUTE: OPEN SESAME—THE TREASURES OF COMMUNICATION SKILLS (READING AND LANGUAGE ARTS).** A two-week intensive institute embracing the various facets of the reading-language arts program for educators on primary, elementary, and secondary levels. Speakers of national renown will share their ideas so that you may more creatively return to your school with new strategies. Group sessions will offer the opportunity to plan programs and design materials for motivating and enriching learning.

ED8-517 **TEACHING READING TO THE INNER CITY CHILD: MATERIALS AND TECHNIQUES.** Concentration on methods found most effective in teaching of reading in target-area schools; actual workshop in media-center of a school; exposure to a wide variety of successful techniques with opportunity to plan individualization; to challenge the wide range of reading levels in an urban school.

ED8-525 **CHILDREN'S LITERATURE.** This course is designed to broaden teachers' acquaintance with literature suitable for elementary school children and to present effective procedures for fostering a love of good reading. Topics covered will include the classics, current fiction and nonfiction, the Newbury and Caldecott Awards, effective techniques of story-telling, interpretation of verse for children, illustrators of children's books, and sources of display materials.

ED8-527 **THE PARENT'S ROLE IN THE READING PROGRAM.** For both teacher and parent: Study of many ways children learn to read; development of reading skills; parent's role in reading process. Guide to enrichment of children's reading from pre-school through grade 6; great success associated with parent involvement.

ED8-535 **DEVELOPING INDEPENDENT LEARNING ACTIVITIES IN READING AND LANGUAGE ARTS.** This course will investigate the teaching of reading in the elementary school from the standpoint of other language arts: listening, speaking, and writing. Emphasis will be on the developmental process of language arts or communication skills. Materials and teaching strategies will be investigated and students will have the opportunity of sharing creative and innovative practices.

ED9-500 **FOUNDATIONS OF READING.** An advanced reading course for elementary and secondary educators and school psychologists; reading growth examined in terms of learning modalities, current research and effective practice. Prerequisite: A previous grade course in reading and/or permission of the instructor.

ED9-585 **CURRENT TRENDS IN THE TEACHING OF READING.** Includes an overview and evaluation of recent innovations in the teaching of reading; a review of current methods of teaching the basic reading skills, and the demonstration and critical analysis of multi-media used in reading. Prerequisite: A previous course in Reading or permission of instructor.

ED9-506 **CURRENT STRATEGIES AND TECHNIQUES IN ELEMENTARY SCHOOL READING.** This course will include two major components. The first component will focus on a review of current methods of teaching basic reading skills. The second component will examine current diagnostic techniques for analyzing reading deficits and the development of appropriate prescription strategies. Upon completing the course, the student will be able to assess current strategies and trends in the reading process; use various evaluative instruments to diagnose student reading needs; develop individual prescriptions to remediate specific reading needs; select appropriate materials for individualized reading programs; employ appropriate reading strategies in reading instruction.

ED9-507 **CURRENT STRATEGIES AND TECHNIQUES IN SECONDARY SCHOOL READING.** This course will have three components. The first component will examine current theories of developmental, corrective and remedial reading at the secondary school level. The second component will focus on the various skills involved in reading in various subject matter areas, while the third component will focus on the application of current theories (component 1) and skills involved in subject areas (component 2) in each of the disciplines. Upon completing this course, the student will be able to identify and use the various elements of developmental, corrective, and remedial reading in his/her teaching; identify skills for teaching reading skills in the content area; employ reading skills in his/her discipline.

ED9-510 **READING IN THE SECONDARY SCHOOL.** Consideration given to aspects of development, corrective & remedial reading at the high school level; word recognition skills explored, including general and technical vocabulary development, use of context, phonetics and structural analysis skills and S Q 3 R' general aim is to provide information to improve reading in all classes.

ED9-512 **ADVANCED STUDY IN THE TEACHING OF LANGUAGE ARTS AND READING.** Focuses on teaching reading and language arts skills through children's books, innovative methods, materials and games devised by participants in the course and curriculum materials and professional texts evaluated and analyzed. Prerequisite: A language arts course at the undergraduate level taken within the past 5 years from an accredited institution and a course in Children's Literature.

ED9-515 **DECODING IN READING INSTRUCTION.** This course will include a study of the sound system of English (phoneme), the written system of English (grapheme) and how they relate to each other. It will also include an examination of a variety of phonetic programs. These will be evaluated in terms of how they reflect the actual phoneme-grapheme relationships of English and in how they contribute to the development of independence in Reading.

ED9-516 **TEACHING LANGUAGE AND READING IN THE INNER CITY.** This course is designed to help teachers understand and be able to alleviate reading and language problems which many children from inner city environments must cope with. Emphasis will be placed specifically on the difficulties many black children encounter in school in language arts classes. Prerequisite: A reading course at the undergraduate level taken within the past 5 years.

ED9-520 **ADMINISTRATION AND SUPERVISION OF READING PROGRAMS.** Purposes of the course include an examination of various theories in the field of current reading programs in school systems, issues under debate by laymen and professionals. Study would involve topics such as the role of the community school in reading programs, pre-kindergarten instruction in reading, uses of reading tests. Other areas in decision-making of administrators and supervisors will include evaluating and assessing total reading programs, including corrective and remedial aspects,

stimulating professional staff development, role of libraries and media centers.

ED9-525 DIAGNOSIS AND CORRECTION OF READING DIFFICULTIES. Studies current diagnostic techniques for the analysis of reading deficits, prescribes appropriate instructional strategies and materials, and diagnosis one pupil's reading problems as presented in a formal case report. Prerequisites: The Teaching of Reading or Current Trends in the Teaching of Reading.

ED9-530 INDIVIDUALIZING READING AND LANGUAGE ARTS IN ELEMENTARY SCHOOL. Focus on means of teaching all of the skills children need to be able to master reading and language arts and insure their success in these areas; concentration on teaching reading and language arts skills through children's books; innovative methods, materials and games devised by participants in the course to meet the individual needs of children; curriculum materials and professional texts evaluated and analyzed to cull out effective ideas that can be adopted and implemented for use in elementary classrooms. Recommended course for master's degree candidates pursuing a concentration in language arts.

ED9-535 READING IN THE CONTENT AREAS. The study skills involved in reading in various subject matter areas; materials and teaching strategies critically evaluated.

ED9-540 READING PROGRAMS: IMPLEMENTATION AND ADMINISTRATION. An analysis of various reading programs: a review of organizational patterns, instructional strategies, curriculum supportive materials and evaluation techniques: A study of the administrative roles and responsibilities essential to effective reading instruction.

ED9-545 ADVANCED SEMINAR IN CHILDREN'S LITERATURE. The purpose of this course is to acquaint students with outstanding authors and illustrators so that they can familiarize themselves with the artists' works. Additionally, current issues and problems in the presentation of children's literature and their implications for teaching will be examined. Criteria for book selection and the most effective ways of using trade books with children will be discussed. Allied media that will help children to love reading will be other areas examined by participants.

This is an elective for language arts majors, and may be taken by language arts majors who have not had an undergraduate course in children's literature within the past five years of their beginning of their program.

ED9-550 READING STRATEGIES FOR THE READING DISABLED CHILD. Consideration of the factors in remediating the child who has reading disabilities; techniques and approaches to alleviate such conditions.

ED9-555 PSYCHOLOGICAL AND SYMBOLIC FINDINGS IN CHILDREN'S LITERATURE. This course will consider the symbolic language found in the various facets of children's literature and its psychological impact on the reader. It is hoped that the student will recognize the similarity of literary themes from all parts of the world and also the fine nuances which distinguish each and become aware of the new and deeper aspects of these themes. Prerequisite: A course in children's literature.

ED9-560 RESEARCH IN THE TEACHING OF LANGUAGE ARTS AND READING.* The focus in this course will be on significant research studies that have been done in the areas of language arts and reading. The history and origins of our English language will be explored. Research papers will be prepared by participants in the areas of speaking and listening, vocabulary development, grammar and usage; reading and creative writing. Views and opinions of prominent contemporary writers will be discussed and their implications for teaching considered.

*Terminal course in concentration.

ED9-565 PRACTICUM: LANGUAGE ARTS AND READING. This workshop for students concentrating in language arts at the master's degree level for the purpose of giving students the opportunity to apply what they have learned in their major area by working with elementary pupils. Students should be responsible for preparing daily seminars. Prerequisite: Students must have taken all prior courses in the language arts sequence or receive the permission of the instructor. (Summers only).

ED9-570 LAB PRACTICUM IN LANGUAGE ARTS AND READING IN THE ELEMENTARY SCHOOL.* Language Arts Concentration majors will work, under supervision, for two weeks in an all-day workshop with pupils from the Worcester community (grades 1-6). The numbers of children will be restricted and will depend on how many graduate students are involved in the workshop. Children with language and reading problems will be helped using innovative materials and methods. In lieu of textbooks, teachers will be asked to pay an amount sufficient to cover the cost of materials which will be used. (Summers only).

*Held during the summer only. Prospective enrollees must see the instructor before the end of May.

ED9-580 SEMINAR IN THE ADMINISTRATION AND SUPERVISION OF READING. Consideration will be given to reading programs at pre-school, primary and intermediate grades, junior and senior high school, college and adult level; aspects of developmental, corrective, and remedial reading; testing and evaluating in school programs; in-service staff development; supervisory and administrative decision-making relative to reading programs.

ED9-590 LABORATORY PRACTICUM IN REMEDIAL AND CORRECTIVE READING. Study will be made of the symptoms and causes of reading disabilities and the procedures which may be used to aid their correction. Each graduate student will be required to diagnose and analyze a pupil's reading difficulties through formal and informal procedures. A remedial program will be initiated and carried out for the pupils in a clinical setting. Cases normally will be from grades three through six. A case history of the remedial pupil will be required. This will include initial and final testing results along with the remedial techniques used. A double period time block will consist of a seminar on the diagnostic and corrective procedures, followed by a work period with the pupil under supervision of the course instructor. Course Prerequisites: (1) Three years teaching experience in the teaching of reading at the elementary level; (2) one basic course in the teaching of reading at the elementary school level; (3) Diagnosis and Correction. The course will carry six (6) semester hours graduate credit. Class size will be limited.

ED9-595 SPECIAL PROBLEMS: ADMINISTRATION AND SUPERVISION OF TEACHER PERSONNEL IN LANGUAGE ARTS AND READING. Candidates studying for the CAGS in Professional Education with a concentration in Language Arts and Reading, upon the consent of the instructor will be expected to supervise and evaluate master's degree candidates in language arts who will be working with children in the elementary grades. Teachers accepted for the course will be required to do a paper, test children, evaluate tests, and critique and use new materials in language arts and reading. A final evaluation of the program will be required. Enrollment limited: Contact instructor prior to registration.

ED8-400 INSTITUTE: SCHOOL LAW; WHO NEEDS IT? This institute is designed to give a general overview of the legal rights of (1) students in relation to faculty and administration; (2) parents with regard to their children's educational experiences; (3) school administrators in relation to students, parents, and faculty; (4) school committee members in relation to administrators, faculty, and the community; (5) teachers with regard

to students, parents, and administrators. 3 credits. 8:30-11:30 a.m. and 1-3 p.m. June 28-July 9.

ED8-405 CHILDREN UNDER STRESS. This course will deal with abuse/neglect, symptoms of child stress: disillusionment, symptoms of parental distress: resolution/ community responsibility.

ED8-455 INTEGRATING ETHNIC STUDIES INTO THE CLASSROOM. This course is designed to meet the needs of classroom teachers in the area of multi-ethnic and multi-cultural teaching. Emphasis will be placed on the development of multi-ethnic and multi-cultural resources, background, and sophisticated knowledge of materials available. Philosophy consistent with multi-ethnic dimensions of society.

ED8-461 METRIC WORKSHOP FOR THE CLASSROOM TEACHER. This course is designed to provide teachers with a hands-on approach to learning this simple and logical system that 95% of the world is presently using. The experimental approach will be accentuated. The major areas of concentration will be length, mass (weight), volume and temperature. Teachers will also have the opportunity to develop materials for use in their classrooms. In lieu of textbooks, teachers will be asked to pay an amount sufficient to cover the cost of the materials which will be used.

ED8-465 MUSEUM EDUCATION. Children always look forward to museum field trips! But are these field trips always effective? With a knowledge of museums as educational resources these trips can become lasting experiences. Museums provide many other valuable services to teachers. This course will explore the many uses of museums as educational tools, and the techniques for integrating museum experiences with classroom activity. The course will include at least one field trip to an area museum. Classes will involve discussions, demonstrations, and other activities.

SECONDARY EDUCATION

ED8-470 LEARNING CENTERS: HELP OR HINDRANCE? A consideration of the development of Learning Centers: the effectiveness and limitations; emphasis on techniques and approaches to their use.

ED8-475 CREATIVITY. A definition and consideration of the meaning of creativity; awareness of the creative person's characteristics; techniques for stimulating and developing creativity in the classroom. Creative expression through art, music, physical education and dramatics as well as reading, science, social studies and other subjects will be considered. Emphasis on helping class members to develop their own techniques and strategies for classroom use.

ED8-480 STRATEGIES FOR BEHAVIOR PROBLEMS. A consideration of the variety of techniques available for coping with behavioral problems confronting teachers and parents. Special attention to Behavior Modification: Glasser's techniques of classroom management; cooperation of schools and parents.

ED8-710 METHODS AND MATERIALS IN SECONDARY EDUCATION. Skills, techniques, materials used generally in effective secondary school teaching, particularized to interests, needs of participants.

ED8-720 COMPARATIVE EDUCATION. Focus on differing organization and methods of education in several foreign countries.

ED8-756 SECONDARY SOCIAL STUDIES CURRICULUM. Designed for secondary school social studies teachers, administrators, curriculum directors and college seniors intending to become social studies teachers; increasing the knowledge and deepen the professional experience of social studies teachers; examination and evaluation of several social studies curriculi.

ED8-757 TEACHING HISTORY WITH FICTION. Teaching history using mysteries, science fiction, historical novels; development of daily and long range plans based on these types of fiction.

ED8-758 ENVIRONMENTAL EDUCATION. This course will help the current or prospective teacher develop environmental awareness, an ability to assess the significance of environmental problems and a confidance in interacting with agencies which plan, monitor, or regulate in the environmental area, in his students. The need is interdisciplinary and should be especially relevant in social studies, economics, governmental studies, and science areas. The class will discuss strategies and resources as well as develop a project for the participant's classes in an effort to involve todays youth in the current decision-making processes which are limiting the options of future generations.

ED8-770 HUMANISTIC EDUCATION. Approaches to blend affective and cognitive approaches to learning. Concentrates on students' values, feelings, and self-concept.

ED8-775 TEACHING SECONDARY SCHOOL MATHEMATICS. Current secondary math curriculum, emphasizing effective teaching practices; including discussion of School Mathematics Study Group (SMSG), Commission of Mathematics of the College Entrance Examination Board, Secondary School Committee of NCTM and others; particular consideration given to discovery approaches, analytic, genetic and laboratory approaches.

ED8-780 SUBSTITUTE TEACHING: SECONDARY EDUCATION. Analysis of role, goals, and methodology of teacher who substitutes from one day to less than complete marking period; emphasis on one or two days of substitute teaching; one period projects in major subject areas designed, role-played and analyzed; clinical workshop approach problems of those presently substituting; members and non-members of course evaluated, academically solved, and role played; micro teaching employed as analyzing technique.

ED8-910 USING THE COMPUTER AS AN INSTRUCTIONAL AID. Features the use of the computer in the classroom and developing the Computer's Assisted Instruction. Computer languages used are Cobol on a batch-processing machine and Basic in a time-sharing terminal environment.

ED8-915 DRIVER AND TRAFFIC SAFETY EDUCATION, PART I CONTEMPORARY ISSUES & METHODS IN DRIVER AND TRAFFIC SAFETY EDUCATION. The professional preparation of candidates for secondary school teaching in Driver and Traffic Safety Education. Techniques of instruction, certification, tests, research, multimedia, public relations, organization and administration of programs are among the topics emphasized. Required for Massachusetts certification.

ED8-920 DRIVER AND TRAFFIC SAFETY EDUCATION, PART II ALCOHOL IN RELATION TO DRIVER AND TRAFFIC SAFETY EDUCATION. A study of the role of alcohol as a drug in relation to traffic safety. An examination will be made of the effects alcohol has on the body, behavior, society, and our transportation system. Attention will be given to tests, court cases, films, traffic studies, and available research.

ED8-922 MOTORCYCLE SAFETY. This course is an instructor's preparation course which will include classwork and on-the-bike experience to train and license high school teachers. Preparation for certification—Registry of Motor Vehicles Driving Test—will be included. In cooperation with the Motorcycle Safety Foundation and The Central Massachusetts Chapter of The National Safety Council.

ED8-927 EDUCATIONAL MEASUREMENT AND EVALUATION. This course considers the nature of measurement, its purpose and value in the learning situation, the types of measuring techniques to be employed. Attention is

given to the development of certain statistical concepts, facility in the selection and use of measuring instruments, and in the interpretation of data secured.

ED8-930 CHAPTER 622: NATURE AND IMPLICATIONS. A survey of Chapter 622 of the General Laws of the Commonwealth which bars discrimination in public schools, programs, activities, admissions, courses, etc. The course will examine the genesis and wording of the law and then progress to a study of the state-mandated regulation for implementation. The implication of the law will also be examined.

ED8-931 CHAPTER 622: PLANNING AND IMPLEMENTATION. This course will survey the specifics of implementing Chapter 622 in each area of public school education which it will effect.

ED8-935 EDUCATION OF THE SELF. This course gives students a chance to experience curricular approaches aimed at self awareness and growth. The course will be based on such previously developed approaches as Values Clarification, Achievement Motivation, and Affective (Psychological) Education.

ED9-110 LAW FOR THE TEACHER. A basic course in the investigation of the Laws of the Commonwealth of Massachusetts and the laws applicable to Massachusetts School Systems. Application of the historical reference of law to the modern intepretation of school problems such as locker search, drugs, discipline, attendance and related problems of teachers.

ED9-407 BEHAVIOR MODIFICATION. The Course will emphasize the various techniques and approaches to behavior modification from the point of view of the teacher and the parent. Skinner, Rogers programs will be examined in detail.

ED9-408 EDUCATION OF THE SLOW LEARNER. This course is an overall consideration of the various methods and techniques for teaching the slow learner (I.Q. 70-90). In the light of current psychological findings concerning the slow learner; diagnostic and remedial measures will be studied and analyzed; development of curriculum; teaching strategies and environmental factors will be considered, illustrated and evaluated.

ED9-409 THE GIFTED CHILD. Methods for indentifying the gifted student; characteristics and personal factors of the gifted; techniques and approaches for curriculum development, classroom work, and individual development of the gifted child; reports of research on the gifted; techniques for developing the gifts of children.

ED9-411 ADAPTING SOCIAL STUDIES TO THE CHILD WITH SPECIAL NEEDS. This course will focus on exploring social studies methods and materials adapted for differing learning styles: specifically involving thinking competencies, levels of conceptual development, language and organizational skills at the concrete, semi-concrete, and abstract levels. Research skills and pupils specialities for the gifted learner will be investigated as well as the philosophy underlying this approach to learning.

ED9-414 TEACHING STRATEGIES FOR MULTI-ETHNIC STUDIES. This course is designed to meet the basic instructional needs required for the effective teaching of ethnic studies in today's classrooms. It will include the definition and scope of ethnic studies, significances, needs, trends, references, and resources.

ED9-430 SEMINAR IN SOCIAL EDUCATION. A seminar for the advanced graduate student culminating his/her social education program. Current issues and problems will serve as initiators for individual research into relevant areas of investigation in social education. The class composition will determine much of the direction of the seminar. Prerequisite: Consent of instructor.

ED9-710 CRUCIAL ISSUES IN SECONDARY EDUCATION. Examination of the more important issues facing secondary education. Emphasis will be placed on problem solving and case study approaches.

ED9-720 ANALYSIS OF CLASSROOM INTERACTION. Inspection, discussion, use, and anlysis of various systems of observing and recording classroom verbal and non-verbal behaviors; special emphasis on Flanders system.

ED9-730 CAREER EDUCATION IN THE SECONDARY SCHOOL. Developing a successful model for implementing a career education program in the secondary classrooms; awareness of available materials and teaching strategies which may be used.

ED9-750 BEGONE DULL GRAMMAR. Particularly for teachers who have to or want to teach grammar; review of causes for failures of past grammar approaches; experiencing of alternative approaches to achieve grammar objectives.

ED9-760 INDIVIDUALIZED INSTRUCTION IN THE SECONDARY SCHOOLS. Examines ways in which teachers may individualize instruction in the secondary schools.

ED9-770 INDIVIDUALIZING INSTRUCTION FOR SECONDARY SCHOOL STUDENTS WITH SPECIAL NEEDS. This two-week workshop is designed to provide secondary school classroom teachers with techniques they can use in their classroom to meet the needs of special needs students.

ED9-780 SECONDARY EDUCATION PROJECT/SEMINAR. Integrating of required, core, and elective courses as applied to secondary education in general, and specifically to school situations of participants. Particular emphasis given to foundational (regarding philosophy, psychology, sociology), curriculum and instructional aspects of secondary education. Customized project required of each participant. Prerequisite: Completion of 21 semester hours of M. Ed. Concentration in Secondary Education.

ED9-785 SECONDARY SCHOOL TEAM TEACHING. This course will explore various models of team teaching in secondary schools. Included will be interdisciplinary as well as intradisciplinary approaches. Differences between middle school and senior high school approaches to teaming will also be considered.

ED9-804 RECENT RESEARCH IN CURRICULUM DEVELOPMENT AND INSTRUCTION IN SCIENCE. Analysis of recent research in science education (K-12) and consideration of implications for curriculum designing in science and for improvement of classroom teaching. Consideration of research tools needed by teachers of science.

ED9-810 PRINCIPLES OF CURRICULUM DEVELOPMENT. Aspects of curriculum development—society, culture, learning theories, taxonomics of educational objectives, structure, hierarchy, balance, politics, strategy for change, and relationship to instruction.

ED9-820 EVALUATION OF CLASSROOM LEARNING. Focus on techniques of classroom evaluation, including stating objectives, devising learning contracts, observation techniques and classroom test construction.

SPECIAL NEEDS

ED8-500 OVERVIEW OF 766. A general consideration of Chapter 766 and its implications for the public and private school; the design of the law's implementation; the administrative procedures; the implications of 766's impact on teachers, parents, and students in the mid-1970's.

ED8-620 EDUCATION OF CHILDREN WITH SPECIAL NEEDS. A general consideration of educating children with Special Needs. Topics will include an overview of the special needs children, Chapter 766, its administrative procedures and implications and impact on teachers, parents, and students.

ED8-650 THE ADOLESCENT WITH SPECIAL NEEDS (LEARNING DISABILITIES). This course is planned for teachers in middle schools (grades 5-8) and in high schools (grades 9-12). Chapter 766 is designed for individuals from the ages of 3 through 21. Much attention has been given to children in the pre-school and elementary school levels. However, the problems of the adolescent with special needs must be addressed. A review of the adolescent and his special problems will be the focus of the workshop. Techniques for assessing and diagnosing specific problems with strategies for helping the student overcome these problems will be present and intensively studied. Reading, language arts, and mathematics will be basic areas for study. Speakers, films, and discussion periods will be used as a basis for the course. The student will be expected to prepare a portfolio of materials for use in his/her own school situation.

ED9-060 EDUCATION FOR CHILDREN WITH LEARNING DISABILITIES. An overview of the psychology of the Learning Disabled child with his/her deficits and strengths. Because of the recent mandate of Chapter 766, methods of intervention will be presented to care for the child with special needs. Looking at the holistically, teachers will become cognizant of and acquainted with the various disabilities, current theories and means of diagnosing, screening and applying remediation.

ED9-600 DEVELOPMENTAL PATTERNS OF CHILDREN WITH SPECIAL NEEDS (formerly known as Characteristics of Children with Learning Disabilities). This course provides a basic understanding of the child with special needs. Consideration of the background and development of this area will be included. The terminology and theories of child development will be presented. Factors which impede learning are analyzed and discussed.

ED9-610 ANALYSIS AND INTERPRETATION OF CHILDREN'S BEHAVIOR AND LEARNING ENVIRONMENT (formerly known as Assessment of Specific Learning Needs). An overview of the evaluation techniques in use for group and individual assessment of perceptual, motor, and conceptual functioning; general capabilities and academic performance of the child with special needs; examination of test data emanating from supportive personnel will be analyzed and interpreted in light of children's needs. The class size is limited. Prerequisite: ED9-600.

ED9-620 DEVELOPMENT AND IMPLEMENTATION OF AN INDIVIDUALIZED EDUCATIONAL PLAN FOR CHILDREN WITH SPECIAL NEEDS (formerly known as Methods and Materials for Children with Learning Disabilities). This course will consider the following topics: Process and task analysis; the scope and sequence of perceptual, cognitive and academic materials; commercial and informal programs; the evaluation of materials; progress reporting; classroom organization and main-streaming techniques. Class size is limited. Prerequisites: ED9-600, ED9-610.

ED9-625 CLASSROOM MANAGEMENT TECHNIQUES FOR CHILDREN WITH SPECIAL NEEDS. This course will include a discussion of the basic principles and procedures for behavior management, its implementation in a school setting, evaluation, and alternative techniques. Each student is expected to conduct a behavior management project as a course requirement.

ED9-630 PROGRAM DEVELOPMENT AND EVALUATION FOR THE GENERIC SPECIAL TEACHER. The examination of current and proposed organizational plans for the delivery of services; application of research findings to curriculum effectiveness; program evaluation in terms of meeting the individual child's needs within the total school structure. Prerequisites: ED9-600, ED9-610, ED9-620.

ED9-640 CONSULTING AND INTERPERSONAL SKILLS FOR THE GENERIC SPECIAL TEACHER. This course deals with the development of consulting skills to be used with parents and school staff. Areas include relationships of special educators with other school professionals, interpersonal skills with parents and school personnel, and effective consultations with teachers, parents and community agencies. Techniques of dealing with stress situations in the home, in the school, and in the community are developed. Techniques to be used in the Core Evaluation are discussed. Prerequisites: ED9-600, ED9-610, ED9-620, ED9-630.

ED9-650 PRACTICUM FOR THE GENERIC SPECIAL TEACHER. The practicum is the final course in the sequence for the Generic Special Teacher and is only available for majors. It involves a field based experience of 180 clock hours in which the student demonstrates his competency in the following areas related to the delivery of indirect services for 501.1-.3 prototype children: Training and consultation for the regular classroom teacher in diagnosis, educational planning, and classroom management for the special needs child; curriculum and pedagogical evaluation; parent training and budget formulation.

SPANISH

SP8-120 SPANISH PRACTICUM III. A third semester continuation of Fundamental Spanish I and II; offered to those persons who wish to establish better communication and understanding with Spanish-speaking people with whom they might come in contact in their professions or daily life; students who need to make up Intermediate Spanish credits and find it impossible to do so during the regular academic year would also find this course useful; attention given to the four skills of speaking, listening, reading, and writing; through more advanced readings (newspapers, magazines, etc.) a cultural appreciation of Spain and Hispanic America is presented; oral fluency is reinforced by regular class participation and the language laboratory.

SP8-130 SPANISH PRACTICUM IV. A second semester continuation of Spanish Practicum III offered to those persons who wish to establish better communication and understanding with Spanish-speaking people with whom they might come in contact in their professions or daily life. Students who need to make up intermediate Spanish credits and who find it impossible to do so during the regular scholastic year would also find this course useful. Attention is focused on the four skills of speaking, listening, reading and writing. Through more advanced readings (newspapers, magazines, etc.) a cultural appreciation of Spain and Hispanic America is presented. Oral fluency is reinforced by regular class participation and the language laboratory.

SP8-250 ADVANCED SPANISH CONVERSATION. Intensive conversational practice to improve fluency and naturalness in the use of everyday and idiomatic language and the development of a comprehensive, practical vocabulary. Selective review of grammar. Prerequisite: Intermediate Spanish and/or the consent of the instructor.

SP8-275 SPANISH COMPOSITION AND COMMUNICATION I. Facility in prose writing, mastery of complex grammatical problems, stylistic analysis of selected exercises in literary extracts. Strengthen written and oral skills through participation in related activities.

SP8-276 SPANISH COMPOSITION AND COMMUNICATION II. This course is a continuation of SP8-275, Spanish Composition and Communication I, wherein further opportunity is given to master complex grammatical structures, and to develop facility in prose writings and to strengthen oral skills. Prerequisite: SP8-275 or consent of instructor.

SP8-300 ESL METHODOLOGY. This course will treat topics in second language acquisition and applied teaching methodology in teaching English to speakers of other languages.

SP8-310 METHODS AND MATERIALS IN THE BILINGUAL PROGRAM. Survey of methods and materials in the subjects taught in the bilingual schools.

SP8-330 **FOUNDATIONS OF BILINGUAL-BICULTURAL EDUCATION.** The rationale for bilingual education, its typology and survey of successful programs. Special consideration of the provisions of Title VII and the Massachusetts bilingual law. Prerequisite: Recommended: "Psychological Foundations of Education," and "The Latin Americans in the United States."

SP8-340 **BILINGUAL/BICULTURAL CURRICULUM: THEORY, DESIGN AND DEVELOPMENT.** This course intends to introduce the students to the elements that bear upon bilingual-bicultural curriculum design and development; leading toward an understanding of the philosophical, psychological and sociological factors affecting curriculum design and development in bilingual-bicultural settings. Opportunity will be provided for the application of the discussed theories.

SP8-310 **METHODS AND MATERIALS IN BILINGUAL PROGRAMS, recommended but not necessary.**

SP8-350 **TRAVEL STUDY COURSE.** These will be opportunities to travel to Spanish speaking countries. All trips will be preceded by a seminar to prepare the students for what they will be studying. Topics and countries will be chosen by students together with the professor. Native specialists in the various fields will accompany the group in the host country. Prerequisite: "The Hispanic World Today" and adequate command of spoken and written Spanish.

SP8-360 **LATIN AMERICAN CULTURE AND CIVILIZATION.** Social, economic, and political institutions of Latin America; collective assumptions, values systems and customs; profound and accelerated changes, their significance for the future. Prerequisite: Adequate command of spoken and written Spanish. 3 credits.

SP8-370 **SPANISH AMERICAN ESSAYISTS.** Study of representative essayists of the nineteenth and twentieth centuries. Prerequisite: Adequate command of spoken and written Spanish.

SP8-375 **LATIN AMERICANS IN THE U.S.A.** This course will survey the Latin Americans in the U.S.: their national origin, distribution, socio-cultural situation, organizations and attitudes vis-a-vis the native Americans. What Latin Americans want and what they are doing for their future will be examined. Special attention will be paid to the Spanish-speaking community of the area. Prerequisite: Adequate command of spoken and written Spanish.

SP8-380 **CONTEMPORARY HISPANIC THEATRE.** Contemporary developments in Hispanic drama from Benevente to the present.

SP8-385 **SPANISH FOR COMMUNICATION.** With different uses in mind, many people have been asking for a pragmatic course in Spanish, involving vocabulary and expressions related to daily life in the Spanish-speaking community. The talking will be done by and with natives from the Hispanic community under the direction of a course coordinator. Prerequisite: Good command of spoken Spanish.

SP8-400 **CONTEMPORARY SPANISH NOVEL.** A study of several important novelists of Post Civil War Spain in light of their formal innovations; reflection of present day Spanish society as seen in their artistic, philosophical, and social preoccupations.

SP8-410 **LITERATURE OF THE SPANISH RENAISSANCE.** Works of the idealistic, realistic, literary currents in narrative prose; caballaresque, pastoral, picaresque novels.

SP8-415 **COMPARATIVE STUDY OF FRENCH AND SPANISH LITERATURE.** It is not infrequent that people who have been heavily exposed to French Literature feel uneasy or puzzled when confronted with Spanish Literature. In this course, a very specific parallel between French and Spanish Literature will be drawn, comparing and contrasting their features. Prerequisite: Adequate command of spoken and written French and Spanish.

SP8-430 **HISTORY AND CULTURE OF PUERTO RICO.** An in depth study of the country in the line of "The Hispanic World. Prerequisite: Adequate command of spoken and written Spanish.

SP8-440 **CARIBBEAN AND CENTRAL AMERICAN CULTURE.** An In-depth study of the area in the line of "The Hispanic World." Prerequisite: Adequate command of spoken and written Spanish and the course *The Hispanic World Today*.

SP8-600 **PRE-INSTITUTE WORKSHOP: "PRE-SUMMER INSTITUTE INTERMEDIATE-ADVANCED CONVERSATIONAL SPANISH."** This intensive advanced oral expression course will be of particular use to those who plan to enroll in the proposed new Spanish master's program at WSC. Only credits obtained in the advanced level of the Summer Spanish Institute will be accepted toward this degree. (Summers only).

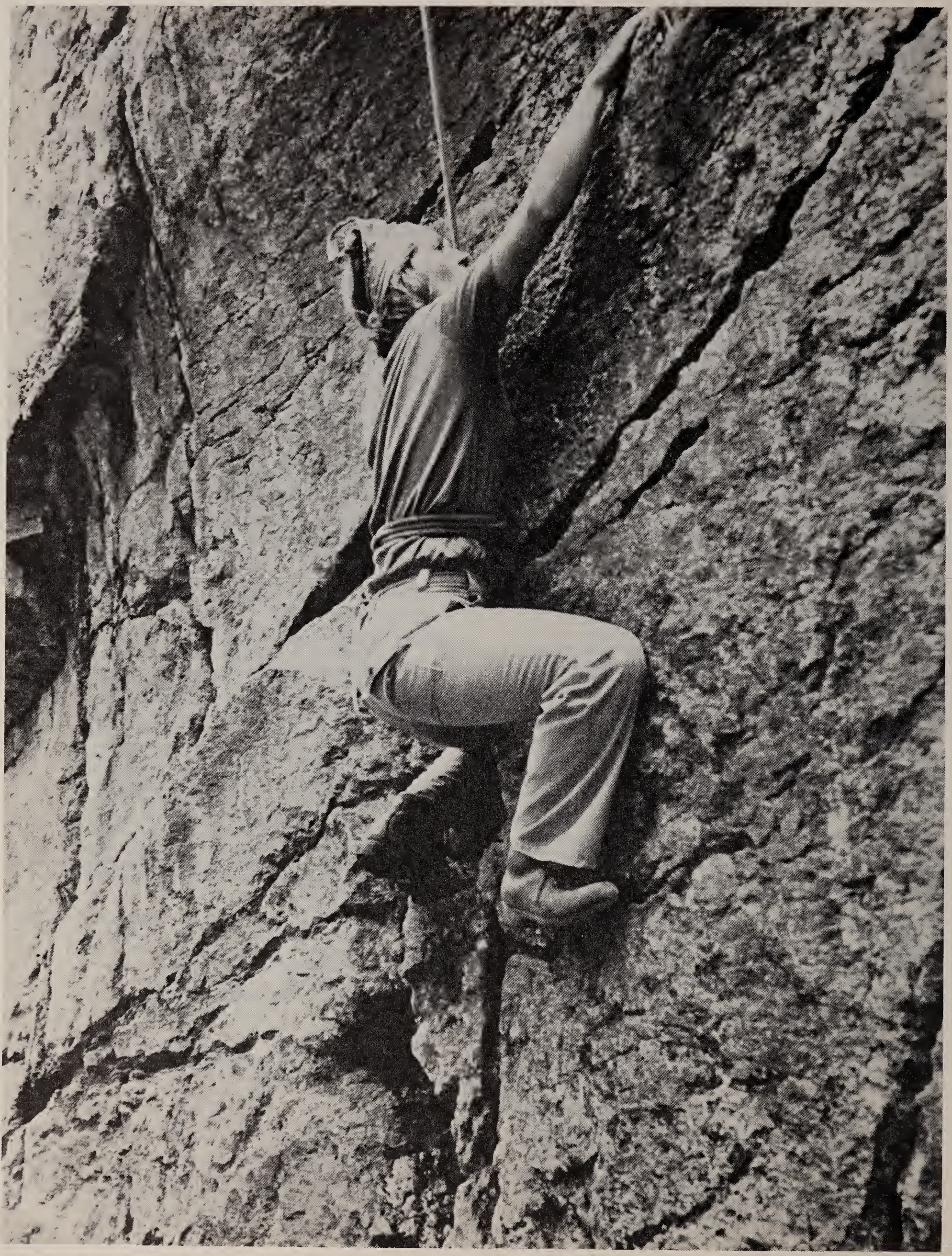
SP8-650 **SPANISH SUMMER INSTITUTE.** The Spanish Summer Institute has been established mainly to improve and consolidate language abilities in a new and different framework. There will be 3 levels of language proficiency, Intermediate, Advanced, and Very Advanced. Only credits obtained in the Very Advanced level are applicable to the Master's program in Spanish. In addition to formal classes, students are expected to speak Spanish during the breaks, and lunch hours. Language classes will be supplemented with movies, guest speakers, and classes on Spanish and Latin American crafts, music, dances, and cooking, all of which will culminate in a final "fiesta." (Summers only).

SP9-100 **SPECIAL TOPICS IN SPANISH.** A very advanced conversation class. The student will be evaluated not only on the oral proficiency but also on the knowledge of the subject matter discussed. The topics to be discussed will be decided by the students and the professor at the beginning of the semester. Prerequisite: Good command of oral Spanish.

SP9-200 **CONTRASTIVE SYNTAX: THE PSYCHOLOGY OF LEARNING A SECOND LANGUAGE AND DERIVED METHODOLOGIES.** Introduction to analysis of errors made by learners of a second language. Contrastive analysis of the sound system and grammatical structures of English and Spanish. Theories and experimentation on the learning process and its applications to the teaching of a second language. Prerequisite: Advanced Psychological Foundations of Education.

SP9-425 **CONTEMPORARY LATIN AMERICAN NOVEL.** A selective survey of the Latin-American Novel since World War I. Introspective Psychological analysis and sociological objectivity. Repercussions of modern ideologies in Spanish-American narrative forms. Socio-cultural problems of Spanish America as seen through its novel. Prerequisite: Adequate command of spoken and written Spanish.

THEATRE ARTS (see MEDIA)



EXTENDED DAY PROGRAM

There has been considerable interest on the part of potential students in attending Worcester State College in late afternoon and evening to pursue a baccalaureate degree.

Because of this expressed need and desire, Worcester State College has structured an extensive program which will be offered through the Division of Special Programs.

Students will be offered traditional and necessary services such as admission counseling, academic advisement, registration information performed by competent personnel.

An extensive course selection has been developed with sequences leading to the bachelor's degree.

The Program will broaden with each succeeding academic year. The EDP functions from 8:30 a.m. to 10:00 p.m.

A candidate may enroll in the Division of Special Programs on a non-matriculated basis until the student desires to attain matriculation status as an undergraduate. All such students must apply for matriculation status no later than the beginning of the semester in which they will graduate.

All phases of the applicant's program of study prior to matriculation will be coordinated and directed by the professional staff of the Division of Special Programs in order to insure a rewarding and attractive academic experience.

PROGRAM OFFERINGS

Majors

English
History
Management
  Business Administration
  Public Administration
  Health Administration
  Accounting/Finance Specialization
Mathematics
Psychology
Sociology
Spanish
Health Education*

* pending approval

Minors

Art
Computer Science
English
History
Health Education
Political Science
Mathematics
Natural Science
Psychology
Secondary Ed.
Sociology

ADVISING AND COUNSELING

Academic advising is available during both the day and evening to students in the Extended Day Program. Students should contact the Division of Graduate Education and Special Programs (S112) for assignment of an advisor. The Academic Advising program is an integral part of the educational process at Worcester State College. Students are urged to consult with their advisor as soon as possible before beginning their program of studies and to meet regularly with the advisor throughout their academic career.

CALENDAR

Students enrolled in the Extended Day Program follow the calendar of the Division of Graduate Education and Special Programs which appears inside the front cover of this publication.

TRANSFER POLICY

Students planning to transfer credits into the Extended Day Program must follow the policy and regulations described in the WSC Undergraduate catalog which is available in the Admissions Office or the Division of Graduate Education and Special Programs office.

CLEP

Students interested in taking credit by examination through the CLEP program must follow the policy and regulations described in the WSC Undergraduate catalog available in the college Admissions Office or the Division of Graduate Education and Special Programs office.

EXPENSES

1) EDP students attending 4:30 P.M. or after
   A. *Tuition*
      In state resident: $25 per credit. (non refundable)
      Out of state resident: $32 per credit. (non refundable)
   B. *Fees*
      Registration fee: $10 (non refundable)
      Library Fee: $10 (non refundable)
      Placement Fee: $5 (graduating students only)
2) EDP students attending the day school should refer to the section on expenses listed in the WSC Undergraduate Catalog available in the college admissions office or at the Division of Graduate Education and Special Programs office.

COURSE LISTINGS

Students desiring to take courses during the day should refer to the WSC Undergraduate Catalog. Students intending to take evening courses should refer to the publications provided by the Division of Graduate Education and Special Programs.

ADMISSIONS PROCEDURE

Students who wish to take courses exclusively in the evening and who are seeking an undergraduate degree from Worcester State College must apply for admission through the Office of Undergraduate Admissions (A203). Students must complete the application for admission, pay the application fee, and forward transcripts and other data required by the Admissions Office. Upon acceptance, such students are required to pay the non-refundable tuition deposit. This tuition deposit will be transferred from the Business Office to the Division of Special Programs.

Students attending through the EDP must notify the Registrar's Office one (1) semester prior to their graduation so that this office can complete the process necessary for the awarding of the baccalaureate degree. It will be necessary for the graduating students to pay their placement fee to the Division of Special Programs during this last semester.

SPECIAL PROGRAMS

The Division helps to plan and coordinate numerous academic activities designed to encourage a life-long interest in learning. Its activities include credit-bearing courses, off-campus courses, non-credit offerings, adult education programs, and travel-study opportunities.

Another function of the Division is the arrangement and facilitation of special workshops, institutes, and conferences. Divisional staff provides guidance and direction of organizations, individuals, and educational institutions who wish to present their special expertise to other members of their professional community. These special programs are planned and developed to provide the information in the most effective and appealing manner possible.

The goal of the Division of Special Programs is to offer a continually expanding vista of opportunity to a wide spectrum of individuals and groups within the Commonwealth.

These opportunities are designed to fill a variety of needs including:

- Students who are matriculated in an undergraduate program may accelerate their progress toward a degree by enrolling in courses which carry undergraduate credit.
- Students with academic deficiencies are able to enroll in courses which are specifically for the purpose of remediation.
- High School students are able to "taste" the rigors and challenges of college academic life (with the approval of appropriate high school personnel.)
- Individuals are able to continue their development as citizens and members of the community.
- Individuals are provided a vehicle for in-service learning.
- Individuals are able to work toward retraining and/or certification at the post-baccalaureate.

In all its many efforts, the Division aims to encourage and reward personal, academic and professional growth in a creative atmosphere.

OFF-CAMPUS EXTENSION PROGRAM

The Division of Graduate Education and Special Programs is committed to providing school systems, business, and other professional groups with on-site programs designated to meet their specific needs.

For the past several years a variety of off campus programs have been developed. These programs have included:

credit courses, workshops, and institutes;
non-credit courses, workshops, and institutes;
workshops for which Continuing Education Units (CEU) are offered.

The Division of Graduate Education and Special Programs stands willing to work with local school systems, business, and other professional groups to develop courses, workshops, and institutes to meet their needs. Courses presently taught at Worcester State College, at either graduate or undergraduate level, can be offered on an on-site basis. Specifically developed courses and workshops carrying Worcester State College credit can be developed to meet the needs of a particular group.

For further information contact the Coordinator of Off Campus Programs at the Division of Graduate Education and Special Programs (1-617-799-2405).

THE SUMMER SESSIONS PROGRAM

The Summer Sessions program, totally self-supporting, is designed to meet the needs of a wide variety of students who are interested in the enrichment of their educational background as well as those whose primary concern is completing requirements for a credential or degree. It includes a variety of classes, workshops, and institutes which will assist in the professional growth and certification needs of teachers, school administrators, and other educational personnel. In addition, many academic departments offer classes for men and women from a spectrum of lay and professional groups who are not working toward degrees, but who wish to acquire new knowledge and skills or to enhance those already acquired.

The Summer Sessions curriculum includes courses which range from lower division undergraduate to upper level graduate. Course offerings may be applied toward undergraduate and graduate requirements at Worcester State College as well as credential requirements.

Students are expected to have satisfied all prerequisites or have secured the instructor's waiver of prerequisites for any course in which they intend to enroll.

The Division of Graduate Education and Special Programs conducts two six-week summer sessions as well as several two and three-week intensive or workshop courses. In addition to the regular curriculum, summer offerings include many unique and innovative programs for teachers and other professional groups.

CONTINUING EDUCATION UNIT PROGRAM

The Division of Graduate Education and Special Programs offers a unique program designed to maintain and develop competencies required in a number of professional fields. Recognizing the national trend toward continuous re-examination of certification, the Division has designed a program in which in-service, competency-based learning can be achieved through the structure of continuing education units. These continuing education units are awarded to the enrollee who successfully completes the specific offering in a professional career area of expertise.

NON-CREDIT OFFERINGS AND ACTIVITIES

The Division of Graduate Education and Special Programs is committed to education in its broadest sense—for all individuals and/or groups to meet personal, professional, and community needs.

To fulfill this commitment, the Division offers each year a wide variety of non-credit opportunities to the Worcester State College community and the community at large.

The non-credit activities include:

1. Non-credit workshops and courses;
2. Non-credit offerings leading to the awarding of a certificate;
3. Topical Institutes, symposia, conferences, and meetings.

Many of these activities are planned in cooperation with campus and community groups and/or institutions. In this regard, the Division maintains a unique relationship with Worcester State College's Institute for Community Services in order to fulfill its mission of maintaining and expanding educational opportunities for all citizens of the Commonwealth.

Course Descriptions (Special Programs)

COMMUNITY CENTERED

CC6-010 **MIME.** A general introduction to the techniques of mime according to the principles of Etienne Decroux and Marcel Marceau. Exercises will include problems of isolation, separation and undulation. Character study will cover both the comic and tragic character. Students will develop both ensemble and solo pieces.

CC6-015 **READER'S THEATRE.** A practical introduction to the art of ensemble, interpretation. Non-dramatic texts, such as short stories, novels, poems, and journals will be examined and adapted for performance. Consideration will be given to both live and screen techniques. Special emphasis will be placed on the selection and presentation of royalty-free material.

CC6-100 **INTRODUCTION TO FIREARM IDENTIFICATION.** This course is designed to: give the student a basic understanding of common firearm terminology; familiarize the student with rules and regulations pertaining to the Massachusetts Gun Control Acts of 1975; make the student aware of how the Crime Laboratory can aid the investigator in identifying evidence at the scene of a violent crime; dispel myths regarding the capabilities of the Firearms Identification Expert; indicate to the student the proper methods of submission of physical evidence to insure that no breaks occur in the custodial chain of evidence. Active participation in a simulated firearm laboratory analysis and identification of weapons, projectiles, and cartridge casings is included.

CC6-200 **THE HISTORY AND ART OF CHESS.** The development of the Royal Game from early times to its present form, and a look at significant events in the present age of scientific play. What chess openings, strategy, tactics, and endgames are all about. A look at Bobby Fischer's impact on chess.

CC6-300 **SELLING YOUR IDEAS IN PERSON—PUBLIC SPEAKING FOR EVERYONE.** Demystifying the art of public speaking, this course stresses technique, not "talent," and focuses on logic, not luck, in overcoming problems in stage fright, memorization, clumsy articulation, and projection. Basic formats in speeches for various purposes will be presented as models for the student's original work, which they will have the opportunity to SEE as well as HEAR through the use of videotape throughout the course.

CC6-400 **MOTORCYCLE INSTRUCTORS COURSE.** This course will prepare teachers of driver education to be certified by the Motorcycle Safety Foundation to become certified instructors in motorcycle safety. It will include a broad overview of guidelines for teaching classroom motorcycle safety; how to initiate a classroom motorcycle program, develop tests, resource materials, use of audio-visual aids, safety rules, and use of texts. An "on the bike" phase is included.

ART

AR8-105 **MIXED MEDIA.** To explore various ways of mixing art media together in both two and three dimensional forms. Studio course.

AR8-115 **BASIC WOOD DESIGN.** Basic introduction to wood as a constructing material. Originality of design encouraged. Hand tools and power tools explored.

AR8-116 **ADVANCED WOOD DESIGN.** Field group project utilizing design within the community. Direct approach to experimental design with an evaluation of the design's functioning processes. Prerequisite: wood design one or permission of instructor.

AR8-120 **CREATIVE PAINTING I.** A studio course designed to give students the opportunity to experience the use of acrylic or oil painting. Interpretation of a variety of subjects.

AR8-125 **DRAWING IN THE VARIOUS MEDIA.** Includes both realistic representation and abstract statements; explored using such media as pencil, ink, conte crayon.

AR8-130 **SCULPTING I & II.** Workshop courses using clay, wood and various metal materials. Beginning and advanced students may register & may begin at their own level.

AR8-135 **SHELTER DESIGN & ALTERNATIVE ENERGY.** The many factors we need to consider in planning our SHELTER, the materials and methods and skills we will use in making it, the alternative sources of heat and energy that might be available to us.

AR8-140 **TEACHING ART IN THE CLASSROOM.** Concerned with the place and function of art in the public schools; stresses contemporary practices through studio experiences.

AR8-175 **COLOR, DESIGN AND IMAGE.** Studio painting course offering series of special projects designed to increase the students' inventiveness in the three areas of: color, design and imagery. Sample projects: "Expressive color"—"Leaer's Structure," "Surrealism," "Color Development," "Found Images," "Symphonic composition," "Action Painting." Appropriate for beginners through advanced. Student responsible for own materials.

AR8-200 **FIGURE DRAWING.** Drawing the human figure using various media, such as pencil, charcoal, chalk. Proportions, motion, lighting and other elements are considered.

AR8-220 **CREATIVE CRAFTS.** A course designed to introduce a number of craft techniques. Particular attention will be given to the creative process as it applies to personal needs as well as teaching needs.

AR8-250 **PRINTMAKING WORKSHOP.** A studio course emphasizing the woodcut and etching (line, aquatint, and soft ground etching). Students are urged to develop and refine visual ideas from work done in previous art courses. Prerequisite: Any studio course.

AR/ED8-260 **ART IN THE ELEMENTARY SCHOOL.** The place and function of art in the elementary school, and contemporary practice through laboratory experiences.

AR8-300 **VISION AND SOUND.** A study in combining sound with sequential visual structure. Requirements: Students must have a record player or cassette tape recorder.

AR8-350 **THE WORCESTER ART MUSEUM.** A lecture and field course covering the collections and exhibitions of the Worcester Art Museum. The class will spend a considerable amount of time at the Museum; at other times, lectures and slide presentations will be given.

ECONOMICS

EC8-125 **MACROECONOMICS IN A MONETARY ECONOMY.** This course will consider aggregate spending and asset-holding decisions within the American economy both in conventional flow variable (consumption, investment) and monetary variable (supply of money) terms. This will suggest a new view of our banking and financial system and an analysis of final effects upon price stability and employment in our economy. Prerequisite: Introduction to Macroeconomics.

EC8-150 **ECONOMETRICS.** This course deals with the three-way marriage of computers, statistics, and economic theory. Much time is spent on the application of techniques learned. Concepts and interpretation of answers are stressed, not statistical calculations. The primary purpose of the course is to acquaint students with some of the econometric tools available for doing research or problem-solving in economics and business. Prerequisite: Any Economics course.

EC8-200 **OUR ENVIRONMENT: AN ECONOMIC VIEWPOINT.** This course is concerned with the two-way street between the environment and production. The physical limits of our environment are being felt in the production process as a shortage of raw materials. These shortages also have given rise to a concern over population growth. Production and a growing Gross National Product on the other hand, are in danger of destroying the very environment they depend upon. What role do economic incentives & disincentives play in this problem? Are the alternatives economically feasible? These are the problems to be analyzed.

EC8-250 **PUBLIC POLICY TOWARD INDUSTRY.** This course will survey analytically public policies designed to maintain or reduce competition in industry or to regulate special industries through public bodies. Included will be special interest areas such as price controls, extension of public enterprise, and national planning movements. Case studies will be incorporated into the class work. Prerequisite: A Principles of Economics course.

EC8-300 **CONSUMER ECONOMICS.** A basic study of personal and family finance with emphasis on the various avenues of obtaining income and budgeting expenditures. We will consider the process of obtaining credit, buying insurance, and various forms of personal saving or investment opportunities for the consumer. Some brief attention will be given to consumer protection legislation near the end of the course.

EC8-400 **WORKSHOP IN ECONOMIC EDUCATION.** This course is designed to present some of the basic ideas of economics while introducing the student to alternative ways of teaching economics other than by using encyclopedic economic texts. To acquaint the students with the available free print and nonprint materials concerning economics which are available to social studies teachers, some of these will be used during the course.

EC8-450 **COMPARATIVE ECONOMIC SYSTEMS.** This course will examine the ideological basis, the theoretical foundations, and the practical operating problems, including political ramifications, of various economic systems. We will compare the systems of capitalism, socialism, and communism, and so-called mixed systems with respect to their relative strengths and weaknesses in addressing the economic problems of resource allocation, income distribution, stability of overall utilization of resources, and economic growth. Most consideration is given to advanced industrial countries which exemplify these systems; the United States, France, West Germany, Sweden, Yugoslavia, the Soviet Union, and China.

EC8-500 **URBAN ECONOMICS.** This course is concerned with the economic view of cities and their problems. The economic aspect of the following metropolitan concerns are discussed: housing, traffic congestion, land use patterns, urban poverty, and the fiscal plight of cities. Other topics covered are the economics of urban education, and some of the various federal government programs which relate to the above. Prerequisite: any Economics course.

FOREIGN LANGUAGE

FL8-300 **COMPARATIVE STUDY OF FRENCH AND SPANISH LITERATURE.** In this course a very specific parallel between French and Spanish Literature will be drawn, comparing and contrasting their features. Prerequisite: Adequate command of spoken and written Spanish and written French.

FR7-101 **INTRODUCTION TO FRENCH AND LANGUAGE CULTURE I.** The fundamentals of written and spoken French correlated with a comparative study of French and Anglo-American culture and civilization; recommended for the humanities distribution requirement.

FR7-102 **INTRODUCTION TO FRENCH LANGUAGE AND CULTURE II.** Continuation of Introduction To French Language And Culture I. Prerequisite: Introduction to French Language And Culture I.

FR7-150 **INTRODUCTORY CONVERSATIONAL FRENCH (or MODERN FRENCH).** A practical approach to French, with emphasis on expression and use of the language for communication and travel. Using basic vocabularies, oral performance is stressed, providing meaningful practice.

FR8-001 **RHINOCEROS ON TAPE.** Students will participate in producing a tape recorded version of a modern French play (Tonesco's *Rhinoceros*). (The play has roles for beginning as well as advanced students.) Prerequisite: 1 year High School French or 1 semester college level French.

FL8-200 **CONTRASTIVE SYNTAX: THE PSYCHOLOGY OF LEARNING A SECOND LANGUAGE AND DERIVED METHODOLOGIES.** Introduction to analysis of errors made by learners of a second language. Contrastive analysis of the sound system and grammatical structures of English and Spanish. Theories and experimentation on the learning process and its applications to teaching of a second language. Prerequisite: Recommended-Psychological Foundations of Education.

FR8-105 **INTRODUCTORY ORAL PRACTICE IN FRENCH I.** A Conversational approach to provide a better acquaintance with the French language, its structure, pronunciation and everyday use. Stressing oral practice and emphasizing the functional use of the language, this course will provide students with a facility to express themselves with more ease and fluency.

FR8-105 **INTRODUCTORY ORAL PRACTICE IN FRENCH II.** Continuation of FR8-105; INTRODUCTORY ORAL PRACTICE IN FRENCH I. Prerequisite: FR8-105 or equivalent.

FR8-211 **ADVANCED FRENCH CONVERSATION II.** Complete review of pronunciation for fluency and accuracy; intonation patterns, practical approach to spoken idiom, emphasis on facility and naturalness. Prerequisite: Intermediate French and/or consent.

FR8-350 **INSTITUTE ON CANADIAN STUDIES.** Sponsored by the Massachusetts State College System Council on Canadian Studies & the Program of Continuing Education of Worcester State College. The Institute will give 2 main components: a course in Canadian French and an interdisciplinary course on Canada. A total of 4 credits for the entire institute; 3 credits for those who do not elect the Canadian French component. Prerequisites: for college juniors, seniors or graduate students. 5 semester college French or equivalent for those electing 4 credit option.

FL9-201 **LINGUISTIC APPROACHES TO LANGUAGE.** A general but intensive introduction to phonetics, syntax, morphology and semantics with illustrations drawn primarily from contemporary American English. Brief survey of modern theories of language from structural linguistics through transformational grammar. Discussion of applications of linguistics to problems of first and second language acquisition, social stratification, communications disorders, etc. Prerequisite: Background in one or more of the following will be helpful—communications disorders, anthropology, formal logic, foreign languages, psychology of learning, philology.

FR9-200 **ADVANCED CONVERSATION.** To attract teachers of French and other languages who would like to expand and use their vocabulary. Envisions a "salon-type" atmosphere where current topics would be discussed. No textbook but reprints of magazine articles for reading and discussion. Completely oral—no writing.

GN7-101 **BEGINNING GERMAN I.** The essentials of German grammar. Emphasis on functional use of the language. Design mainly for language teachers or students proficient in foreign languages. Prerequisites: none.

GN7-102 **BEGINNING GERMAN II.** The essential aspects of the German language: its fundamentals of structure, speech patterns, pronunciation, writing, reading, laboratory work. Continuation of Beginning German I. Prerequisites: Beginning German I.

GEOGRAPHY AND GEOLOGY

GE8-001 **BIBLE LAND GEOGRAPHY.** Topics will include Palestine, the Ancient Near East before the Exodus, the Land of Canaan, the Exodus, Israel in Canaan, the United Monarchy, Israel and the Ancient Trade Routes, the Kingdoms of Israel and Judah, Palestine after the Exile, Jerusalem, the Background of the New Testament and the Archaeology of Bible Lands.

GE8-101 **THE PHYSICAL ENVIRONMENT.** The interaction and the impact of man on his environment and the environment on man. Man's use and misuse of the earth's waters, lands, and atmosphere; the controls placed on man by his natural environment are themes of this course in environmental science. (Course open to qualified undergraduates with the consent of the instructor.)

GE8-105 **GEOLOGIC INFLUENCES IN THE NEW ENGLAND LANDSCAPE.** The aim of the course will be to develop an understanding of the geologic forces which have shaped New England's distinctive scenery. Analysis of the bedrock foundation will be followed by consideration of the profound effects of glaciation and post-glacial events. Attention will also be given to coastline features, mountains, and areas of special geologic interest. Field trips will be arranged to nearby localities. No prerequisite.

GE8-110 **MAN'S INTERACTION WITH THE PHYSICAL ENVIRONMENT.** A consideration of the basic workings of the physical environment and man's relationships to it. Includes the following topics: weather, landforms, the hydologic cycle, solar heating, flood control, water and air pollution.

GE8-115 **GEOMORPHOLOGY.** A survey of the earth's varied landscape forms and their origins through the work of rivers, glaciers, ocean waves, wind, volcanic action and other geologic processes. Class will include lectures, slides, map study, and field trips. Prerequisite: Some background in geology or physical geography is desirable.

GE8-140 **WORLD REGIONAL GEOGRAPHY—PART I.** The purpose of the course is to develop a greater understanding and appreciation of the different characteristics of the people of the earth in their national groupings, on the stage of the natural geographic environment and its relation to political, economic, and social problems. Part I of the course emphasizes Europe, the U.S.S.R. and the Middle East.

GE8-150 **WORLD REGIONAL GEOGRAPHY, PART II.** Development of a greater understanding and appreciation of the different characteristics of the people of the earth in their national groupings, on the stage of the natural geographic environment and its relation to political, economic, and social problems; emphasis on Europe, the U.S.S.R. and the Middle East.

GE8-222 **MAN'S ENVIRONMENT—THE EARTH'S CRUST (GEOLOGY).** The course will emphasize a new approach to understanding the earth's crust through the unifying model of global plate tectonics. The concepts of continental drift and sea floor spreading, origin and evolution of continents and ocean basins, the formation of rocks, and the structure and composition of the earth will be examined in the light of recent advances in the geological sciences.

GE8-290 **ECOLOGY AND CONSERVATION IN AMERICAN SOCIETY.** The fundamental ideas included in ecology and conservation in the United States and their relationships to contemporary problems such as pollution, resource shortages, and wildlife management.

GE8-400 **GEOGRAPHY OF WINE.** The cultivation of wine grapes and their manufacture into wine, considers a regional stress—United States, France, Germany, and Italy; 2nd topical stress—physical geographic relationships, manufacture, marketing and consumption. Wine sampling required.

GE8-420 **ECONOMIC GEOGRAPHY.** Geographic factors contributing to the localization of economic activities; distribution, production and trade.

GE8-450 **GEOGRAPHY OF THE CULTURAL ENVIRONMENT.** A geographic approach to the cultural environment, this course presents a systematic overview of the cultural elements: population, language, religion, settlements, forms of economy and land use.

GE8-455 **INDUSTRIAL GEOGRAPHY.** Study of industrial concentrations and patterns on the earth's surface. Topics include: location theory, transportation cost structures, technological change, the origins of the industrial revolution, and several industrial case studies.

GE8-460 **THE GREAT ICE AGE.** The legacies of the Ice Age are still very much present in our natural environment. This course will survey the influences of this profound event in earth history as they are reflected in landforms, soils, natural vegetation, animal life, and the development of early man. Emphasis will be on the glaciation of the North American continent and the subsequent evolution of its present landscape.

GE8-600 **THE MIDDLE EAST: ITS CHANGING ENVIRONMENTS.** During the hundreds of years of human history this area of the world has been changing its landscapes, its ways of living, its economies, and its political structures. Its strategic location, however, at the crossroads of the world is as important today as it was at any time in its history. Modern techniques of land use and oil royalties are slowly but surely changing much of its human geography as well as some of its physical environments. To provide an inventory of and create an understanding of these changes is the aim of the course. Geography of the region will be emphasized.

MANAGEMENT

MG8-001 **MARKET FORECASTING AND PLANNING.** Analysis and actual development of sales forecasts and their relationship to various functions of the business enterprise will be discussed. The three levels of marketing forecasts will be investigated and related to forecasting for an established product and the introduction of a new product. Within the framework of establishing a forecast, the planning function of marketing will be integrated into the overall operations of the enterprise. An analysis of a particular case study will also be utilized.

MG8-002 **MANAGEMENT BY OBJECTIVES I.** An analysis of Management By Objectives (MBO) from theoretical and a practitioner's point of view. MBO is a widely used systems approach for managing by results. Emphasis on lectures, practical exercises, role play and case studies. No prerequisites. Students *must* take *both* Management by Objectives I & II.

MG8-003 **MANAGEMENT BY OBJECTIVES II.** An analysis of Management By Objectives (MBO) from theoretical and a practitioner's point of view. MBO is a widely used systems approach for managing by results. Emphasis on lectures, practical exercises, role play and case studies. No prerequisites. Students *must* take *both* Management by Objectives I & II.

MG8-004 **HUMAN RESOURCE UTILIZATION I.** This seminar is arranged in three topic areas clearly delineating concepts important to the utilization of human resources in all types of work organizations. This will permit individual participants to submerge in specific areas where they need assistance and develop to their maximum ability in up-grading of skills. Concepts of job enrichment for managers & workers, coping with change & conflicts, & development of management systems for optimum use of human resources will be presented. Small group projects will be used in the classroom as well as lecturettes & open discussion. No prerequisites. Students *must* take *both* Human Resource Utilization I & II.

MG8-005 **HUMAN RESOURCE UTILIZATION II.** This seminar is arranged in three topic areas clearly delineating concepts important to the utilization of human resources in all types of work organizations. This will permit individual participants to submerge in specific areas where they need assistance and develop to their maximum ability in up-grading of skills. Concepts of job enrichment for managers & workers, coping with change & conflicts, & development of management systems for optimum use of human resources will be presented. Small group projects will be used in the classroom as well as lecturettes & open discussion. No prerequisites. Students *must* take *both* Human Resource Utilization I & II.

MG8-863 **WORKSHOP IN HUMAN RESOURCE UTILIZATION.** Arranged in three topic areas clearly delineating concepts important to the utilization of human resources in all types of work organizations. This permits individual participants to submerge in specific areas where they need assistance and to develop their maximum ability in up-grading of skills. Concepts of job enrichment for managers and workers, coping with change and conflicts, and development of management systems for optimum use of human resources presented. Small group projects used in the classroom as well as lecturettes and open discussions.

MG8-073 **WORKSHOP IN MANAGEMENT BY OBJECTIVES.** An analysis of Management By Objectives (MBO) from theoretical and a practitioner's point of view. MBO is a widely used systems approach for managing by results. Emphasis on lectures, practical exercises, role play and case studies.

MG8-175 **LABOR RELATIONS AND COLLECTIVE BARGAINING.** An introductory course reviewing the public and private labor relations system in the United States. Particular emphasis will be placed on reviewing the development of labor relations in America, including its legal framework, and a study of the essential elements

of a collective bargaining agreement. Relevant personnel matters including equal opportunity laws will also be reviewed. Prerequisite: MG7-250 or MG7-260

MG8-180 GOVERNMENT REGULATION OF BUSINESS. An overview of the new wave of government regulation on the operations of both large and small business firms. Consideration of regulatory programs in the areas of consumer practices, discrimination in employment, job safety, and management of environmental issues. Emphasis is placed on the methods by which business adapts to the increased role of government, such as compliance, evasive tactics, and direct efforts to modify burdensome requirements.

MG8-200 THE BUSINESS WORLD IN CHINA TODAY. Introductory survey course designed to assist students who are presently or will in the future be involved in business dealings with China. Since an understanding of the philosophical components affecting the conduct of business by the Chinese people is vital to economic contacts with the native community, this will be stressed. Students will also gain an understanding of natural resources and products, the economic and the import—export situations. Practical aspects concerning the establishment of business relationships with the Chinese people and government included.

MG8-419 FEDERAL TAXATION. A basic course on federal income and employment taxes with specific emphasis on personal income taxes and the preparation of individual returns. The study and analysis of income tax problems and solutions. Impact on business of current income tax laws and procedures.

MG8-420 DEVELOPING AND IMPLEMENTING A TRAINING PROGRAM FOR BUSINESS AND INDUSTRY. The course is designed to instruct the student on the means of developing and implementing a training program with particular emphasis placed on the demands of the "Occupational Safety and Health Act" and the "Equal Employment Opportunities Act." The techniques of evaluating a current program and researching or writing a new training program are considered. The latter part of the course deals with the actual methods of presentation of the training program.

MG8-425 INVESTMENTS AND THE STOCK MARKET. The course will consider such topics as: the investment setting, how the security markets work, the investment process, sources of investment information, how to evaluate investments, decision-making in investments. Common and Preferred Stock investment will be examined as will Bond investment.

MG8-430 INVESTMENT STRATEGIES. An in-depth examination of several aggressive investment strategies that can afford investor returns of up to 25%. Topics covered include commodities, options, arbitrage and tax shelters as well as additional investment opportunities. Prerequisite: Investments and the Stock Market or a basic knowledge of stocks and familiarity with investments.

MG9-100 MANAGERIAL ECONOMICS FOR ADMINISTRATORS. Economics and the operation of organizations; Macro and micro economic theory and impacts; Theory of the firm, marginal analysis, managerial economics of operations, price and output determination, profit theories, valuation.

MG9-150 BEHAVIORAL SCIENCES FOR ADMINISTRATORS. Study of work groups, inter-groups, and individual behavior; Human resource utilization concepts; Theories, concepts and research findings in the Behavioral Sciences applicable to administration processes and practices; Basic Management and organizational concepts and tools.

MG9-160 OPERATIONAL ANALYSIS AND MIS. Management Information System knowledge and tools is presented i.e. types, forms, uses, costs, etc. Topics include decision-making theory and practice, information sources, inventory control, PERT, CPM, computer applications, data bases, system designs for information flows and uses.

MG9-170 MARKETING MANAGEMENT. Application of administration tools to marketing functions. Market strategies, distribution, pricing, sales forecasting, wholesaling and retailing techniques used.

MG9-175 FINANCIAL MANAGEMENT. Application of administration tools to problem analysis and solutions in the finance area; financial asset utilization concepts, collection and analysis of financial data, investment analysis.

MG9-180 ORGANIZATIONAL OPERATIONS. Application of administrative tools to solution of logistic, operational, and production functions; utilization of technological assets; government regulations and role in transportation movements of goods and services.

MG9-500 ADMINISTRATIVE POLICY FORMULATION AND STRATEGY. A capstone integrative course designed to develop administrative analytic skills and abilities, formulation and implementation of strategies for organizations. Planning, forecasting, and control functions are applied to short and long term goal formulations. Assessment of internal strengths and weakness of operations are matched to trends in the external environment for strategy formulation through comprehensive case analyses. Students prepare a career portfolio or industry trend assessment paper for classroom defense. Prerequisite: Financial Management, Marketing Management, Behavioral Sciences for Administrators plus any one of the following: Operational Analysis, Managerial Economics, Organizational Operations, or an equivalent course or permission of the instructor.

MEDIA

ME8-001 PUBLICITY MADE EASY. A how-to-do-it course for anybody who would like to learn how to let the outside world know that you are holding a party, giving a party, presenting a play, etc. Included will be the use of materials and media.

ME8-050 EDUCATIONAL THEATRE INSTITUTE I—Creative Dramatics and Theatrical Innovation. The principles and techniques of developing and leading sensory awareness, movement and improvisational dramatic activities, particularly with children. Emphasis are placed on the value of creative dramatics for furthering personal growth and creativity. Also examined is the relationship between creative dramatics and education. Other areas included are story dramatization and value teaching.

ME8-055 EDUCATIONAL THEATRE INSTITUTE II—Techniques of Play Production. An offering which prepares the student to direct plays at any level. The basics of script analysis and preparation and the techniques of directing are studied in relation to a well-known work written for the stage. Also included in the curriculum are the organization of cast and backstage workers, preparing the production schedules and the basics of scenery design and construction, costuming, makeup and lighting.

ME8-100 CREATIVE ADVERTISING AND PUBLICITY. A "how to do it" workshop which introduces the student to the forms, functions, and materials of effective and efficient public information operations, which can have immediate applications in practical situations.

ME8-110 THEATRE: YESTERDAY, TODAY AND TOMORROW. The development of civilization can be understood, to a marked degree, through the history of live dramatic

entertainment. This offering traces the evolution of theatre as an institution, as a medium for artistic expression and as a forum during significant periods of history, and presents a prognosis for its future in a technological age.

ME8-115 **AMERICAN ENTERTAINMENT THROUGH THE AGES.** An examination of the performances seen and heard by the population of this country from the Colonial period through the present. Although the emphasis will be on live events—plays, musicals, circuses, vaudevilles and others—the contributions of motion pictures and television will also be included.

ME8-120 **ORAL INTERPRETATION AND READER'S THEATRE.** The principles and techniques of presenting dramatic and non-dramatic literature to audiences without scenery, costumes, make-up or properties. The emphasis is on the application of vocal expressiveness to the material after appropriate analysis. In-class presentations.

ME8-140 **INTRODUCTION TO WESTERN DANCE: FORM AND FREEDOM.** A unique opportunity to work with the outstanding New England repertory dance group, Concert Dance Company, in a format covering both theory and practice of various aspects of Western dance. Lectures will introduce the student to the history of basic classic dance forms in Western civilization. Workshops will involve the novice in a myriad of technical styles, as well as practice in improvisation and composition. The course will culminate in an informal performance by students and company members.

ME8-145 **THE PERFORMER IN SPACE.** For students with or without a formal background in dance, this workshop will focus on the aesthetic and communicative patterns of the human body. Human movement will be examined in terms of how we relate to and are affected by architectural surroundings. Using the "found" artworks of the campus landscape, the participants will improvise a short videotape recording of their discoveries.

ME8-180 **IMPROVISATIONAL ACTING.** A workshop for actors of any level of experience and development, and for teachers and recreation leaders for all age groups. Exercises will cover, among other things, stimulation of imagination, creative movement, ensemble performance and the creation of mimed and spoken scenes. In addition to the improvisation of original scenes by the student, the principles of improvisation will be applied to the rehearsal of conventional scripts.

MUSIC

MU8-250 **MUSIC OF THE ROMANTIC PERIOD.** A survey of 19th century music beginning with Beethoven. Emphasis on listening and stylistic aspects of major romantic composers.

MU8-251 **MUSIC APPRECIATION.** A historical study of music from medieval times to the 20th century with emphasis on the outstanding masterpieces of the great composers of each period.

MU8-275 **SYMPHONIC MUSIC.** The study of symphonic masterpieces from the 18th and 19th centuries. Emphasis will be given to major composers of the symphony beginning with Haydn.

MU8-280 **THE CONCERTO.** A survey of the concerto from the eighteenth to the twentieth centuries with emphasis on the development of the piano concerto.

MU8-300 **OPERA: ORIGIN, DEVELOPMENT, AND APPRECIATION.** The beginnings of opera as a stage presentation up to and including opera seria of the Twentieth Century. The course will emphasize the masterworks of Italian, French, and German composers. Recordings, illustrations and demonstrations will be from personal experiences of the instructor.

MU8-325 **THE GOLDEN ERA OF PIANO MUSIC.** The development of piano literature in the 19th and early 20th centuries; emphasis on major composers of solo piano music including Beethoven, Schumann, Chopin and Liszt. No previous musical background is required.

MU8-370 **TWENTIETH CENTURY MUSIC.** A comprehensive study and general listener's approach to contemporary music in various media beginning with Impressionism through Stravinsky. The Schoenberg School, Bartok, Hindemith, The American, Soviet and other significant composers, including electronic and oleatory music.

MU8-390 **SURVEY OF MUSIC IN AMERICA.** Survey of music history and literature in America including gospel, spirituals, jazz, popular and classical music.

MU/ED8-400 **MUSIC IN THE ELEMENTARY SCHOOL.** Designed for classroom teachers; course explores the role of music in contemporary education and the musical concepts, skills, teaching methods and materials appropriate in the elementary school music program. M & W; 7-10 p.m.; Kaminsky.

MU8-500 **FUNDAMENTALS OF MUSIC.** This course is designed to provide students with the knowledge of notation, major and minor scales, intervals, rhythms, chords, elementary harmony and basic knowledge of the piano. No previous knowledge of music is required.

NURSING

NU8-001 **INTRODUCTION TM THE PROBLEM ORIENTED RECORD SYSTEM IN HEALTH CARE DELIVERY.** Designed to introduce the health care provider to the components of the problem oriented record system to encourage the scientific method in making health assessments. The use of computers as a tool in the delivery of care will be introduced. 2 credits.

NU8-002 **BASIC SKILLS FOR IN-SERVICE NURSES.**

NU8-200 **THE NURSE AND THE LAW.** Designed to introduce the Registered Nurse to some of the most important legal problems facing her profession. Such questions as malpractice, abortions, and employee-employer relationships will be covered. The goal will be to demonstrate how the nurse should handle such situations in order to care for the patient and also comply with the law.

NU8-205 **CARE IN NURSING.** Introduction to the concept of caring and its application to understanding of self and of others particularly in relation to providing effective nursing services to people.

NU8-210 **CURRENT CONCEPTS OF PSYCHIATRIC NURSING.** This course will provide a review of some concepts of psychiatric nursing with emphasis on both theoretical and clinical issues including the changing role of the psychiatric nurse in the hospital and in the community.

NU8-215 **BASIC ELECTROCARDIOGRAPHY.** This course is designed to introduce the nurse to electrocardiography. The content includes the electrocardiography of the normal heart and basic arrythemias originating in the atrium, atrioventricular junction and ventricles.

NU8-220 **PATIENT MANAGEMENT IN SELECTED NURSING CARE SETTINGS.** This course concerns itself with the broad concepts that allow for variation in nursing practice. Emphasis will be to provide an intellectual framework for analysis and understandings of the scientific nature of nursing activity.

NU8-225 THE HELPING RELATIONSHIP. The course will focus on the nature of the relationship between client and helper within the context of a problem solving approach to both crisis and long term issues. Emphasis will be placed on the practice of interpersonal communication via out of class interviews and use of in-class role playing experiences.

NU8-230 INTRODUCTION TO HEALTH ASSESSMENT. This course, which has both theoretical and practicum components, is designed to introduce the learner to health care data collection skills including history taking and physical assessment. The problem-Oriented Record System as a method of recording data will be emphasized.

NU8-235 PSYCHOLOGICAL ASPECTS OF ILLNESS. Analysis of concepts such as anxiety, regression, and body image, and their relation to health and illness. Open to any student.

NU8-240 CURRENT CONCEPTS IN ONCOLOGIC NURSING. This course is designed to introduce the learner to the current concepts in the practice of oncological Nursing. Five broad categories will be covered including professional awareness of the problem, screening techniques and early detection, therapy, quality of life and rehabilitation. Open to RNs, LPN's and Student Nurses.

NU8-250 FOUNDATIONS OF FAMILY THERAPY. This seminar introduces the student to the basic theoretical principles underlying the field of family therapy. Discussion will center around dynamic, structural, systems and communication theories of family functioning and will point toward the developing of skills in counseling and intervention with families, required for admission.

NU8-255 HUMANISM IN INTERDISCIPLINARY HEALTH CARE. This course will focus on the recipient and provider of health care in a variety of settings and with particular emphasis on the hospital. The impact of inter- and intra-professional behaviors will be examined.

NU8-260 FAMILY-CENTERED NURSING PRACTICE. A course designed for nurses in a variety of clinical settings to explore the impact of illness on families as well as individuals. General systems theory will form the framework for examining the structure and process of families, the environment in which the family functions, and those factors which contribute to disruption in family systems. Nursing intervention aimed at minimizing the disruption of illness will be identified.

NU8-300 THE PERSON IN THE PROFESSION OF NURSING. Designed for registered nurses to provide the opportunity to explore the importance of self and understanding of self in relation to others and in relation to the profession.

NU8-440 LEADERSHIP IN NURSING INTERVENTION. This one semester course is designed to provide the student with fundamental administrative theory and techniques necessary to the development of a team leadership role in either the institutional or community setting. Prerequisite: NU8-410, Nursing through the life span ii and/or permission of the instructor.

NU8-500 CURRENT CONCEPTS OF PUBLIC HEALTH NURSING. This course is designed to give the Registered Nurse an understanding of the philosophy of public health and public health nursing. It will trace the history of public health nursing to the advent of recent federal legislation and its effect on the health care delivery system. Emphasis will be placed on the role of the certified home health agency, boards of health, school health programs, and neighborhood health clinics in meeting community needs.

NU8-600 CORONARY CARE FOR NURSES. Designed to prepare the professional nurse to assess the patient as an individual in the Coronary Care Unit and to provide direct comprehensive intensive nursing care. The importance of effective communications with other health team members concerning the needs of the cardiac patient will also be stressed.

NU8-700 PATHOPHYSIOLOGY. PRINCIPLES OF PATHOGENESIS which apply to most diseased states will be covered first. This will be followed by a review of the normal physiology of selected organs and systems and finally by abnormal and pathologic physiology. Deviation of function at the gross and molecular level, and brief reference to causes, symptoms and laboratory findings will be discussed. Each deviation of function will be viewed as a stress that places a burden on the body's control mechanisms and total energy resources. Clinical and research specialists will be invited occasionally to give lectures.

PHILOSOPHY

PH8-001 INTRODUCTION TO THE SCIENCE OF CREATIVE INTELLIGENCE. The science of Creative Intelligence is the study of the two basic impulses of life—creativity and intelligence. Order in nature, and man's power of ordering shows that intelligence is at the core of every physical existence and every human mind. SCI has its beginning in the observation of the phenomenal world. Closely examining a phenomenon reveals laws which are then found to have application and use in other fields according to their range and influence. This lecture series explores a point of view about expanding awareness: systematically contacting the source of thought, the pure field of creative intelligence within each individual, to provide increased energy, creativity and spontaneity in daily life. Sponsored by Students International Mediation Society.

PH8-200 MORALITY AND HUMAN ACTS: CASE STUDIES. An inquiry into human situations of personal, social, political, legal and religious importance in order to discover what principles, standards, qualities, requirements, values, rights, and obligations exist that can be known and applied to the process and judgments of human actions for oneself and toward another.

PH8-203 RIGHT TO LIVE AND RIGHT TO DIE! The possibility of judging these questions is faced with the everyday fact that judgements are made. They let us inquire into the legal, customary, religious, social, biological, ethical and political foundations so that the "final solution to the human question" is not made for us!

PH8-225 THE DEATH OF GOD. An exploration of the ideas which form the movement known as "The Death of God." Exploration of "radical theology," "Christian atheism" and "new theology." Includes examination and critique of the works of John Robinson, Harvey Cox, Thomas Altizer, Gabriel Vahanian. Films, guests, student projects. Also concerned with the "future" of God and the "future" of religion.

PH8-235 PHILOSOPHICAL PROBLEMS OF SOCIOLOGY. Theories and methods of social science examined in order to disclose the implicit premises of Social Science models of man, and delineation of the existential ramifications of the premises; deliberations are the bases for discussing the question—What are (or should be) the differences between social science and other kinds of science.

PH8-236 PHILOSOPHY AND THE RISE OF SOCIAL THEORY: AN INTRODUCTION. Introducing students to the works of Social Philosophers including Hegel, Marx, Comte, and Dewey, who wrote extensively about the relationship between man and society. PH 236 will hopefully, help students develop a philosophical-conceptual basis for understanding modern mass movements and communism.

PH8-237 POLITICAL AND SOCIAL PHILOSOPHY. An analysis of the Fundamental concepts of groups and individuals in social and political theory and a discussion of problems of relations of groups and individuals. Among problems and concepts to be discussed are responsibilities of individuals to groups, the nature of collectivity, the concept of community, and the concept of an individual.

PH8-240 PHILOSOPHY OF HISTORY. In this course, student research and class discussions will be centered on the works of several philosophers including Hegel, Marx, Vico, and Collingwood who attempt to answer the question: "What is the nature of history?."

PH8-250 PHILOSOPHY OF RELIGION. The examination of the central problems of religion: the problem of the existence of God; the structure of religion; man's knowledge of God; religion as a necessary dimension of human life; the search for a personal God; the relation of faith to reason and the contemporary critics of faith and religion.

PH8-254 INTRODUCTION TO 20TH CENTURY RELIGIOUS THOUGHT. Exploration of the changes that have come into religious thought in 20th century through various thinkers such as Buttmann, Tillich, Bonhoeffer, Merton, Huxley, Gurdjieff, Baba Ram Das, as well as through certain events such as Vatican II and World Council of Churches, and certain movements such as crisis theology, death of god-movement, and Zen Buddhism. Assessment of the present state of religious ideas.

PH8-291 PHILOSOPHY OF HUMAN POTENTIALITY—AN EXPERIMENTAL APPROACH. Theories and practices from the Human Potentials Movement used to unlock the potentialities for growth and self-being of each participant; the concepts and experiences of centering encountering, energy-flow, self-actualization, consciousness-deepening, body-awareness and creative-freedom, developed through intrapersonal, interpersonal and transpersonal situation; focus on the existentiality and spirituality of human experiencing.

PHYSICAL EDUCATION

PE8-001 YOGA, MEDITATION AND RELAXATION. A course of physical and mental exercises designed to help the individual toward a goal of increased awareness, personal fulfillment, tranquility of mind and body.

PE8-100 MOVEMENT EDUCATION/RECREATION FOR SPECIAL POPULATIONS. Principles of Movement Education will be applied to the teaching learning process relating to PHYSICALLY HANDICAPPED, MULTIPLY HANDICAPPED and the LEARNING DISABLED. Participants will experience basic movement education, gymnastics, aquatics and games and will adapt these activities to special populations.

PE8-101 MOVEMENT EDUCATION. A success-oriented, problem-solving approach to teaching physical education emphasizing creativity; used to teach sports, games, gymnastics, aquatics, and dance.

PE8-200 LEARNING THROUGH MOVEMENT AND INTERRELATED ARTS. An experiential course dealing with student creativity in all the arts—emphasizing integration through movement; elements of movement interrelated with the elements of music, language arts and visual arts; individual and group experiences created around line, space, time, form, color and nature.

PE8-225 TEACHING OF SWIMMING FOR THE PHYSICALLY HANDICAPPED—3 credits.

PE8-250 PRINCIPLES OF COACHING. The understanding and skills necessary for a person to coach children in any sport; the values a coach must teach, the relationships the coach must establish between himself and the school; the team, the individual player, the opposing teams and the community will be analyzed.

PE8-275 COACHING OF WOMEN'S VOLLEYBALL. The teaching of basic volleyball skills will be analyzed along with team selection, conditioning, offensive and defensive strategies, scouting and an in-depth study of rules and officiating techniques.

PE8-280 SCIENTIFIC PRINCIPLES OF COACHING. A guide for coaches and athletes which applies the principles and mechanics of motion to a variety of physical activities in order to improve performance without wasted energy and effort. The laws of physics, physiology, and mathematics are related to physical activities. Twelve sports activities are analyzed. The coach and athlete can derive a significant edge in the hotly competitive world of athletics.

PE8-300 YOGA AND HEALTH. The purpose of this course is to develop a balanced unity and integration of the total person; mind, body and soul. The major yoga traditions of the East—Raja, Hatha, Bhakti, and Karma—will be practiced in the context of the general health and well-being of the person. Emphasis will be upon Hatha yoga, the practice of integrative movement, breathing and relaxation. No prior experience in yoga is necessary. 1 credit.

PE8-400 THE TEACHING OF DANCE. Presentation of methods and materials for use in the teaching of 3 dance forms: folk, square, and touch. Evolution of these dances; history, formations, and step patterns from the past to the present will be progressively introduced through both theory and participation.

PE8-425 THE THEORY AND PRACTICE OF MODERN DANCE. This course will include a foundation for the teaching of modern dance; technique, composition and historical aspects in education, as well as choreography. The principles involved in dance will be explored with an emphasis on dance-oriented exercises for the body as well as creative patterns of expression.

PE8-500 FUNDAMENTALS OF ATHLETIC TRAINING. A course covering the prevention and treatment of all types of athletic injuries. To be able to treat the simple types of injuries and recognize the more serious, is a must for the coach or physical education instructor who is, of necessity, his own trainer. Basic anatomy and physiology, taping, and operation of the various modalities encountered in the training room will be covered.

PE8-550 RECREATIONAL LEADERSHIP. After a brief study of the history and basic principles of recreation, students will acquire a knowledge of the methods employed in conducting surveys and organizing both indoor and outdoor activities under the categories generally employed, such as Adult, Industrial and Social Recreation. Playground activities, Arts and Crafts, Camping and Water Sports will be evaluated.

PE8-510 TECHNIQUES OF TEACHING TEAM SPORTS. Principles, techniques, and psychology of coaching; teaching techniques involved in competitive athletics at the elementary, junior high, and senior high school levels and basic principles of teaching sports fundamentals emphasized; athletic programs and patterns of coaching of specific sports on various grade levels studied, demonstrated, and evaluated in terms of the needs and interests of the students.

PE8-600 THE ORGANIZATION AND ADMINISTRATION OF ATHLETICS. This course is designed for those who are involved in planning and conducting intramural and interschool sports on the elementary, junior high and senior high school levels. The factors of time, space, equipment, facilities, budget, scheduling and public relations will be discussed and evaluated.

PE8-700 COACHING AND TEACHING OF TENNIS. This course will include the fundamentals of coaching tennis. Analysis of strokes, strategy, and team selection will be covered. Enrollees must supply their own racquets.

PE8-800 **TECHNICAL ROCK CLIMBING.** The purpose of this course is to present to teachers and students a series of skills in the areas of technical rock climbing and mountaineering. It is intended that such a workshop would aid those persons involved in outdoor education to present to students an addition to a curriculum that is different, exciting, self-challenging, and fun. The main phases of concern will be on location (rock) instruction in basic climbing procedures and techniques; safety and first aid in climbing situations; criteria and methods in establishing mini-outdoor programs. The majority of practical experience will take place at Leominster State Park. It is assumed that participants be in reasonably good physical condition; able to share and contribute to a rather rigorous program based on a modified Outward Bound philosophy.

POLITICAL SCIENCE

PO8-100 **INTRODUCTION TO AMERICAN GOVERNMENT.** A survey of American politics; national, state and local: the interaction of political institutions, both governmental and non-governmental.

PO8-110 **WORKSHOP IN COLLECTIVE BARGAINING.** The main focus of the workshop will be public sector bargaining in Massachusetts. The philosophy of collective bargaining will be discussed as well as the tactics of collective bargaining. Speakers experienced in the field will present certain aspects of the subject.

PO8-225 **CRIMINAL JUSTICE.** The theories behind criminal justice, the role of the police and the citizen in the administration of the criminal law. The Massachusetts criminal law, with particular emphasis on the rights of defendants, adult and juvenile, from arrest through conviction.

PO8-300 **THE MODERN PRESIDENCY.** This course will examine the evolution of the Presidency. Special attention will be paid to those Presidents who have expanded the office.

SOCIOLOGY

SO8-200 **CONTEMPORARY SOCIAL PROBLEMS.** A critical analysis of the social, political, urban and industrial changes in American society, introducing specific problems of contemporary American life.

SO8-201 **SOCIAL STRATIFICATION.** The course will deal with the factors, elements, and processes that create and sustain systems of social differentiation, ranking and evaluation; the theories and methods applied to the investigation and understanding of the nature and consequences of such systems.

SO8-202 **SOCIOLOGY OF EDUCATON.** A course designed to study education, emphasizing the social process as well as the institutional structure. Particular attention will be given to the social role of teachers, administrators, pupils, the group basis of education, and community influences. Prerequisite: SO7-100 (Introduction to Sociology).

SO8-203 **SOCIOLOGY OF MENTAL HEALTH.** Labeling and social definitions of mental health and disorder; social factors which contribute to mental health and mental disorder in the community and in the small group; sociological issues in the treatment and prevention of mental disorder. Prerequisite: SO7-100 (Introduction to Sociology).

SO8-206 **FORMAL ORGANIZATIONS.** The course will focus on an analysis of the nature of formal organizations, with particular attention to their structure, function, communication networks, degrees of formalization, and objectives and goals. Prerequisite: Introductory Sociology.

SO8-207 **SOCIOLOGY OF THE FAMILY.** The study of the family touches on cultural, psychological, and structural processes that define the family as a unique institution in society as well as in divergent cultures and historical periods. In addition, internal process of cohesion and dissolution will be explored in terms of the above issues. Prerequisite: SO7-100 (Introduction to Sociology).

SO8-208 **JUVENILE DELINQUENCY.** An application of contemporary delinquency theory to delinquency data, emphasizing a critical analysis of conditions, causes, consequences, and corrections in the light of legal, official, and social perspectives concerning juvenile offenders and offences. Prerequisite: Introductory Sociology.

SO8-209 **COLLECTIVE BEHAVIOR.** An analysis of the current theoretical positions on the formation and development of collective behavior, with particular attention to the potential of such collectivities to effect social change and to generate social tensions and conflicts. Prerequisite: Introductory Sociology.

SO8-210 **MEDICAL SOCIOLOGY.** Concentration on two related areas within the field—one area is the social organization of hospitals, the patterns of interaction within which doctors, nurses, patients and staff function, the attitudes held by the medical staff toward terminal patients and death in the hospital setting; the second area deals with mental hospitals and the social-psychological processes of becoming a patient, the processing of the patient within the hospital, and the career of the patient; discussions in both areas emphasizes interpersonal relations between doctors, nurses, hospital staff, patients, and patients' families within the hospital setting and outside it. Prerequisite: Introduction to Sociology.

SO8-211 **CRIMINOLOGY.** A practical and theoretical examination of the phenomena of crime and criminal behavior. The legal, social, and sociological definitions of crime and criminality in that they become the foundation for the concepts of both the preservation and the violation of justice, and individual freedom, and the need for social control. The social mechanisms for dealing with both issues and individuals will be carefully scrutinized.

SO8-301 **SOCIAL PSYCHOLOGY.** Social psychology is concerned with the interpersonal, ideational and interactive basis of group and collective cohesion and social action. The collective interactive foundation of institutions, social structure and social movements will be discussed as well as personal and individual adaptions to group life and social changes.

SO8-320 **SOCIAL THEORY.** A thorough review and examination of the theoretical models, social constructs, and analytic tools which are employed by social theorists of both the classical and contemporary schools. Particular emphasis will be placed on structural sociology and the on-going nature of the development of social theories.

SO8-360 **SOCIAL PROBLEMS.** A comprehensive evaluation of those changes which come about as the result of a reordering of the social, political, urban, and industrial elements in society, and the consequent redefinition of social roles, behavioral expectations, and status. While the specific problems examined will be associated with the American experience, the broad international spectrum of sociological theories will be examined. Prerequisite: SO7-100 (Introduction to Sociology).

SO8-370 **THE DILEMMA OF CLASS AND RACE IN MODERN SOCIETY.** The study of the processes by which men in modern societies are differentiated, and, upon that basis, accorded differential treatment. Special consideration will be given to the problems of economics,

politics, the development of group consciousness, and the patterns of group response.

SO8-410 SOCIOLOGY OF DEATH. Theories and studies of grief and bereavement; problems of terminal patients; death denial and styles of mourning; the sociology of the mortuary—attitudes toward the funeral, the funeral director and funeral arrangements; and comparative studies toward death.

SO8-425 SEMINAR IN SOCIOLOGY: CRISIS IN THE AMERICAN FAMILY; SEPARATION AND DIVORCE. Centering on a discussion approach, this seminar will consider the question of separation and divorce from a socio-methodological approach. The contemporary literature in the field will be carefully examined in terms of trends and the problems encountered by participants in those proceedings.

SO8-430 SEMINAR IN SOCIOLOGY: CRISIS IN THE AMERICAN FAMILY: VIOLENCE—THE BATTERED CHILD AND THE BATTERED WIFE. With an emphasis on discussion, this seminar will consider two vital problems of American family life—the battered child and the battered wife. Recent studies have indicated that the problem of violence within the family is rapidly becoming the most serious issue in the sociological study of the family. Contemporary writings, both scholarly and popular will be used to focus the attention of the participants on these matters.

SO8-435 SEMINAR IN SOCIOLOGY: THE SEXUAL REVOLUTION. This seminar will closely examine the changing sexual norms of American society through an intensive examination of changes in the legal definitions of obscenity, pornography, consenting adults, cohabitation, etc. Because of the nature of the material to be discussed, this seminar will be open only to mature students. Prerequisite: Permission of instructor required.

SO8-460 APPLICATIONS OF SOCIAL PSYCHOLOGY. An effort to understand the dynamics of groups. Emphasis focuses on the individual but within the context of sociological influences. Special consideration is given to interpersonal relations, socialization, and symbolic interaction.

SO8-470 SEMINAR IN RESEARCH METHODS. Designed to prepare students majoring in sociology and economics for undertaking research projects; research methodology and presentation of data; field problems used as vehicle of instruction. Prerequisite: SO7-100 (Introduction to Sociology).

URBAN STUDIES

UR8-100 KNOWING THE CITY. This course is designed for the person interested in the contemporary city but who lacks previous academic training in urban studies. After a survey of how the various social sciences approach the study of cities, the course develops a series of introductory topics such as models of city growth, location and central place theory, residential and social segregation, land use and housing economies, techniques of demographic analysis, power structures, and emphasizes the roots of present-day urban problems. The course concludes with a study of the issue of whether urban life is beneficial or harmful to the individual.

UR8-150 SOMEWHERE BETWEEN SCYLLA AND CHARYBDIS. Today as we flee from too many choices, each with their calculated gains and unavoidable losses, our questions are answered in warps of time and space. In this collage of human hazards with only a gossamer weaving to navigate by, our tendency has been to witness the mathematical process by which all things slow down and stop. This course will explore the integral characters of mass attraction and accelerating acceleration through which synergy has come to be understood and accepted as an explanation for behaviors of a whole system unpredicted by the separate behaviors of any of its parts. In keeping with inherent logic and orderly interaction, students will explore areas of human concern which range from a Fear of Flying to the Sirens of Titan. It should also be noted that, by the end of the course, each participant ought to have concluded that Something Happened.

UR8-213 AMERICAN METROPOLITAN EVOLUTION. Course will trace the rise of metropolitan America using a variety of social science approaches and seek to identify important themes and contours in our nation's urban evolution. Topics for the course will be selected from among the following: The city in American civilization, location and function of American cities, the role of land-use patterns in urban development, transitions from pre-industrial to industrial, the influences of technology, the economics of urbanization, population growth and demographic characteristics, industrial impact on the social order, social stratification and power, location of activities in cities, systems of cities, suburban and satellite growth, the city as a cultural force, and the rise of megalopolis.

UR8-214 WORCESTER: THE RISE OF THE CITY AND ITS PEOPLE. The evolution of Worcester from agricultural hamlet to industrial city seen both from an historical perspective and from the view of various social sciences. The first part will study important theories of urban development, the role of transportation and technology, patterns and experiences of immigrants, ethnic community development, the role of institutions, intra-group and inter-group relations and antagonisms, land-use patterns, and the city in regional and national affairs. The second part will apply these social science theories and insights to Worcester as a case study.

UR8-216 THE AMERICAN CITY. A study of the evolution and condition of today's American city developed from various social science approaches. The contemporary city will be seen from a background of historical, economic, geographical, cultural, and social-psychological theory.

UR8-300 THE CITY AND ITS PEOPLE. The growth of American industrial and post-industrial urban society emphasized from the perspective of group immigration patterns, community and neighborhood formation and transition, intergroup and intra-group relations, status and power, occupational differentiation, social mobility, and the adjustments required of newcomers to survive in a new and challenging environment.

UR8-400 LOW ENTROPY ENERGY SYSTEMS FOR URBAN DWELLINGS. This course is designed to evaluate the effectiveness of alternative energy approaches for on-site application, including solar collectors, wind devices, heat pumps, structural materials and low entropy design. The course will be conducted in a laboratory format, with immediate opportunity for innovation and direct implementation in an existing dwelling, and in a manner which will permit comparative testing for durability and cost/effectiveness.

UR8-600 INTRODUCTORY INTERVENING SKILLS. This course will investigate the skills and process necessary for successful interviewing. The course is particularly designed for non-clinicians who are involved in various types of helping relationships with adolescents or young adults. Several different approaches to interviewing will be presented through readings and demonstration. In addition, class members will be encouraged to participate in exercises where they will have a chance to practice their own interviewing. The purpose of the course will be to help people analyze and strengthen their natural helping skills, rather than trying to instill one particular counselling style. No prerequisites are required. Course will be limited to 20 students with preference given to those involved in direct contact with adolescents.

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A.B. University of Michigan, M.A. Clark University

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Assistant Professor of History, 1968
A.B. Holy Cross College, Ed.M. Worcester State College,
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Associate Professor of History, 1965
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University

FRANK S. MINASIAN
Assistant Professor of Political Science, 1968
A.B. Clark University, M.A.T. Assumption College

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Assistant Professor of History, 1968
B.S. Central Connecticut State College, M.A. Boston
University

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Assistant Professor of History and Political Science, 1971
B.A. Miami University, M.A., Ph.D. University of Michigan

EMMETT A. SHEA
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B.S. in Ed., Ed.M. Worcester State College, M.A.
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Professor of History, 1957
B.S., A.M., Ph.D. Boston University

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LIBRARIANS

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Coordinator of Personnel and Work Study
Commerce High School, Diploma

KRISHNA DASGUPTA, Librarian IV. 1969
Coordinator of Technical Services
B.A., Asubosh College, M.A., Calcutta University
M.L.S., Simmons College

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Acquisition
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Coordinator of Information Services
B.A., Amherst, M.F., Yale University
M.L.S., University of Rhode Island

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Commerce High School, Diploma

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B.A., University of Massachusetts
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Cataloger
A.A. Mt. Wachusett Community College
B.A. University of Massachusetts
M.L.S., S.U.N.Y.

BETSEY J. BRENNEMAN
Assistant Librarian 1977
B.S.Ed. Kent State University
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Associate Professor of Management—Public
Administration, 1975
B.A. City College of New York, Ph.D. Columbia University

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B.M.E. General Motors Institute of Technology, M.S.,
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B.S. Northeastern University, M.A. Boston University
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Ph.D. University of Pittsburgh

MEDIA

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Assistant Professor of Media, 1971
A.B. Colby College, B.D. Kenyon College
M. Div. Colgate Rochester

PAUL DAVIS
Associate Professor of Media, 1962
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A.B. Harvard College, M.S. Simmons College

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Instructor of Theatre, 1970
A.B. Hunter College, M.A. New York University

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Assistant Professor of Theatre, 1968
A.B. Anna Maria College, M.A. Catholic University

MUSIC

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Assistant Professor of Music, 1967
B.M., M.M. New England Conservatory of Music,
M.A. Middlebury College

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B.M.E., M.M.E. Indiana University

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Assistant Professor of Music, 1968
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M.M. Michigan State University

NATURAL SCIENCE and PHYSICS

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Professor of Physics and Supervisor of Student Teachers, 1959
B.S., Ed.M. University of Maine, M.S. Syracuse University,
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Assistant Professor of Physics, 1968
B.S. Antioch College, M.A., Ph.D. Princeton University

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B.S., M.S. Siena College, Ph.D. University of Connecticut

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Assistant Professor of Nursing, 1974
B.S. University of Vermont,
M.S. University of Massachusetts

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Instructor of Nursing, 1975
B.S. Boston College School of Nursing,
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Associate Professor of Nursing, 1975
B.S. University of Bridgeport, M.S. University of Connecticut, M.S. Boston College, Ed.D. Boston University

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Professor & Director of Nursing Program, 1973
B.S., M.S. Boston University School of Nursing,
Ed.D. Boston School of Education

MARY HALEY
Assistant Professor of Nursing, 1976 (temporary)
B.S. M.S. Boston College

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Assistant Professor of Nursing, 1974
B.S. Syracuse University, M.S. Boston College

PHILOSOPHY

NEIL F. BROPHY
Assistant Professor of Philosophy, 1971
A.B. Assumption College, A.M. Laval University

GERALD ROBBINS
Associate Professor of Philosophy, 1973
B.A. Rutgers University, M.A. New School for Social Research

DION SCHAFF
Assistant Professor of Philosophy, 1971
B.A. New College, Sarasota, Florida, M.A., Ph.D. Brown University

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Assistant Professor of Philosophy, 1971
A.B. George Washington University, Ed.M., Ed.D. Boston University

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Associate Professor of Philosophy, 1969
A.B. Iona College, M.A. St. John's University, New York
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PHYSICAL EDUCATION—MEN

FRANCIS T. DYSON
Associate Professor of Physical Education, 1959
B.S. Holy Cross College, M.A. Boston University

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B.S. Boston University, M.S. Springfield College

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Associate Professor of Physical Education, 1952
B.S.., A.M. Teachers College of Columbia University

PHYSICAL EDUCATION—WOMEN

JANET E. DEMARS
Assistant Professor of Physical Education, 1970
B.S. Sargent College, Ed.M. Springfield College

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B.S., M.S. Southern Connecticut State College

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PSYCHOLOGY

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Professor of Psychology, 1950
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Assistant Professor of Psychology, 1972
A.B., M.S. St. John's University, M.A. Catholic University, Ph.D. Fordham University

SECONDARY EDUCATION

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B.S. Salem State College, Ed.M., Ph.D. Boston College

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A.B. Assumption College, M.A. Clark University, Sixth Year Diploma, University of Connecticut, Ph.D. University of Michigan

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Professor of Secondary Education and Supervisor of Student Teachers, 1965
B.A. Holy Cross College, Ed.M. Hyannis State College, M.A. American International College, Dip. in Prof. Ed., Ph.D. University of Connecticut

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Professor of Secondary Education, 1968
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Assistant Professor of Secondary Education, 1971
B.A. Earlham College, M.A., Ed.D. Ball State University

SOCIOLOGY

FRANCIS L. BROOKER
Assistant Professor of Sociology,
A.B. Brandeis University, M.A. Northeastern University

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Professor of Sociology, 1954
B.S. Holy Cross College, Ed.M. Fitchburg State College, M.A. Clark University, Ed.D. Boston College

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Professor of Sociology, 1972
Dip. in Soc. Welfare Pol., M.Soc. Sci. Institute of Social Studies, The Hague, Ph.D. University of Colorado

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URBAN STUDIES

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Associate Professor of Urban Studies, 1973
A.B. University of Rhode Island, M.A. Indiana University, Ph.D. University of Connecticut

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B.A. Emmanuel College, MSW Brandeis University

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HELEN G. AGBAY, 1974
LAWRENCE A. AVERILL, 1974
VIRGINIA BALL, 1974
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J. WILLIAM BIGONESS, 1974
WALTER P. BUSAM, 1974
SR. JOSEPHINA CONCANNON, 1976
CORNELIUS S. DONOGHUE, 1974
VERA M. DOWDEN, 1974
MYRA C. FITCH, 1974
WINIFRED A. FITCH, 1974*
ELIZABETH V. FOSTER, 1974*
MARY T. HAYES, 1974
EDWIN R. HEDWIN, 1976
FRANCIS L. JONES, 1974
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YVONNE GALLANT-MARTEL, 1977
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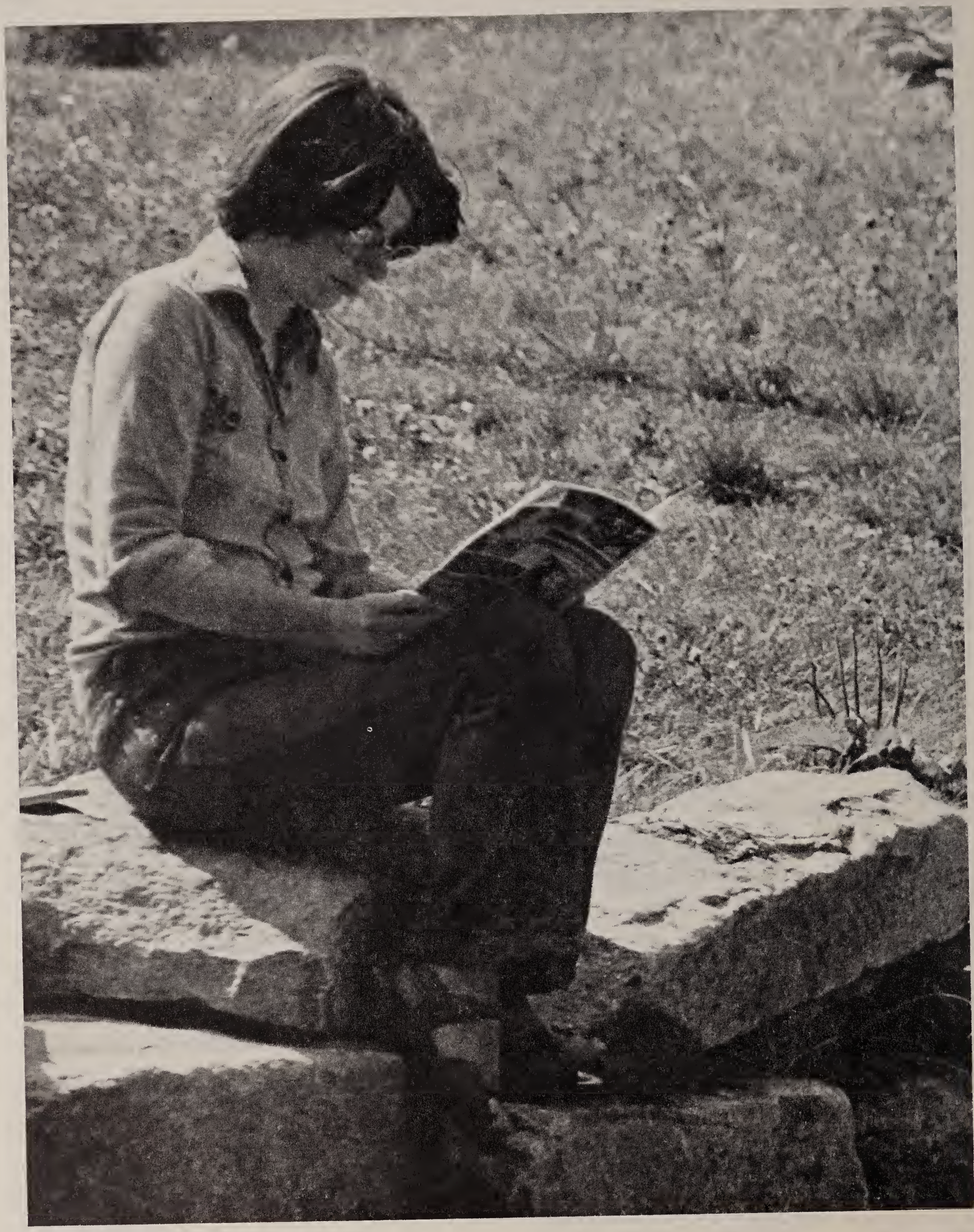
JOSEPH W. RIORDAN, 1974
CARLETON E. SAUNDERS, 1973
AGNES E. SCRIBNER, 1974
EARL B. SHAW, 1974
GEORGE ELEANOR SHAW,1974
RUTH V. SOMERS, 1974
DOROTHY STAFFORD, 1974
LENA A. WEST, 1974*
MADELIN A. WILMARTH, 1974

*Deceased



VISITING FACULTY

BROOKS, LESLIE
B.S. 1961 Worcester State College,
M. Ed. 1963 Worcester State College,
M.A. 1967 Assumption College,
J.D. 1974 Western New England School of Law

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B.S. 1970 Fitchburg State College,
M.A. 1972 Fitchburg State College

BUCKLEY, JAMES J.
A.B. 1954 Boston College,
M.Ed. 1955 Boston State College,
M.A. 1963 Tufts University,
C.A.G.S. 1968 Harvard University,
Ed. D. 1969 Harvard University

BULLENS, DONALD
BS 1969 Worcester State College
MS 1974 Worcester State College

BURACK, CHARLES
BS 1951 Worcester State College,
M Ed 1952 Worcester State College

CAPOZZO, ANTHONY
BSE 1946 Fitchburg State College,
Ed. M 1947 Fitchburg State College

CASALE, JOSEPH
BA 1959 Boston School of Fine Arts

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BSBA 1969 Clark University,
M Ed 1976 Worcester State College

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AA 1968 Worcester Junior College,
BA 1970 Worcester State College
MA 1971 Assumption College,
M Ed 1974 Worcester State College

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BS 1957 Boston College,
M. Ed. 1958 Boston State College-
Bridgewater State College

DAILEY, ANN
BA 1945 Baylor University,
MA 1947 University of Michigan

FISCHER, JOAN
AB 1966 Montclair State College,
MA 1970 Seton Hall University

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BA 1949 Clark University,
M Ed 1955 Worcester State College

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BS 1963 Worcester State College, M Ed 1970 Worcester State College,
Ed D 1973 University of Massachusetts

GANNON, JEAN
BA 1964 Anna Maria College,
MA 1966 Boston College

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BA 1955 St. Francis College,
MA 1960 Fordham University

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BA 1951 Providence College,
MA 1966 Northeastern University,
CAGS 1968 University of Connecticut

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BBA 1969 Nichols College,
MBA 1974 Clark University

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AB 1968 Boston University,
MA 1969 University of North Carolina

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Ed D 1969 Boston University,
M Ed 1959 Boston University
B Ed. 1952 Rhode Island College

LIMOGES, NORMAN
B Ph 1956 University of Ottawa
L TH 1960 University of Ottawa,
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BA 1949 Bryant College,
AS Industrial Engineering 1957
Worcester Junior College

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BS 1969 Castleton State Teachers College,
M Ed 1970 University of Vermont

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Ed M 1966 Worcester State College,
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Ed D 1972 University of Sarasota

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MA ED School of Education

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Ed D 1975 Nova University

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M Ed 1969 Salem State College,
Ed D 1975 University of Massachusetts

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AB University of Notre Dame,
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AB 1967 Assumption College,
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MS 1965 Syracuse University,
AB 1962 Syracuse University

academic calendar

Fall Semester 1977

Mail Registration	August 8 - August 21
In-Person Registration	August 22 - September 2
Late Registration	September 6 - September 9
Class Begin in Fall Semester	September 6
Deadline for submission of Applications for Matriculation for Spring 1977 Semester	October 1
Columbus Day - No Classes	October 10
Thanksgiving Holiday - No Classes	November 23 & November 24
Classes resume after Thanksgiving	November 28
Classes end in Fall Semester	December 15

Spring Semester 1978

Mail Registration	December 27 - January 8
In-Person Registration	January 9 - January 20
Late Registration	January 23 - January 27
Classes Begin in Spring Semester	January 23
Deadline for submission of Applications for Matriculation for Summer 1978 Semester	February 1
Washington's Birthday - No Classes	February 20
Deadline for submission of Applications for Matriculation for Fall 1978 Semester	April 1
Spring Vacation - No Classes	April 17 - April 21
Classes resume after Spring Vacation	April 24
Classes end in Spring Semester	May 11
Commencement	May 27

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Association for Continuing Higher Education,
National University Extension Service,
National Council of Graduate Schools,
American Association of Adult Education,
North American Association of Summer Schools.

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Worcester State College is an accademic community whose doors are open to all students without regard to race, religion, age, sex, or national origin. Opportunities and experiences are offered to all students on an equal basis and in such a way as to recognize and appreciate their individual and cultural differeneces. This policy of equal opportunity in education underlies all of the graduate and undergraduate programs and services of the College. In implementing this policy, Worcester State College adheres to the guidelines and requirements of Title VI of the Civil Rights Act and Title IX of the Higher Education Act of 1972.

All Students are strongly urged to make themselves thoroughly familiar with the Regulations and Procedures o outlined in this publication. It is the responsibility of the student to be aware of and comply with all regulations and procedures. Failure to read this publication does not excuse students from the requirements and regulations which are specified.

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